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MAGAZINE

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2023

Tarlee – South Australia

- Oberon – A location to model
- Arduino Accessory Decoders and Servos
- Putting the O in Casterton pt3
- Reviews • Mailbag • AMRM News

Issue 359 Vol. 31 No.2
ISSN 0045-009X

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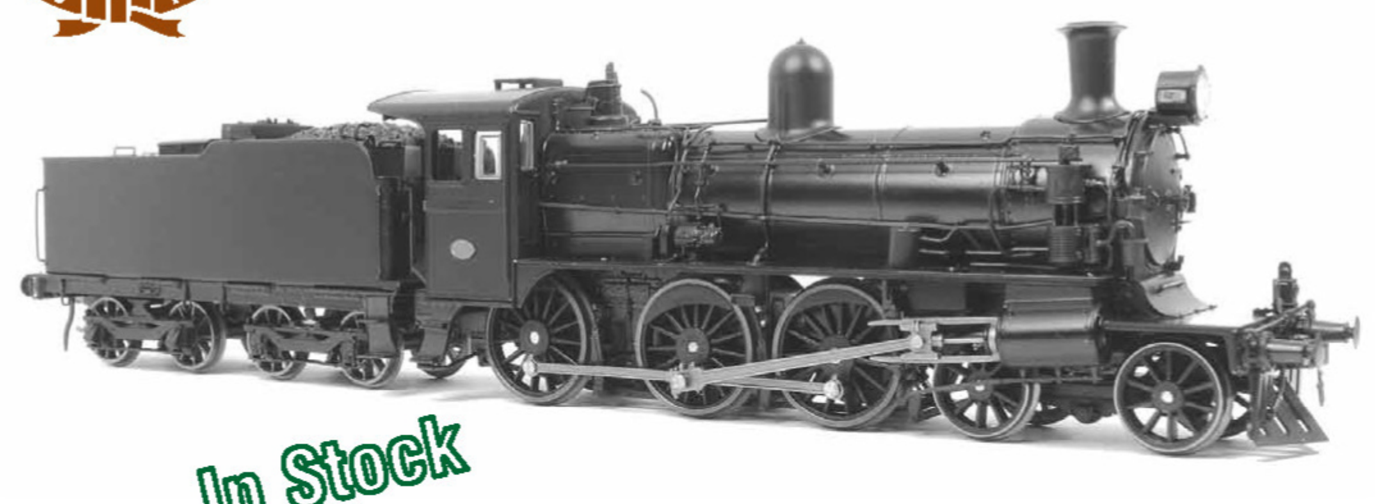
1 : 87

Victorian Railways
D3 Class Locomotive



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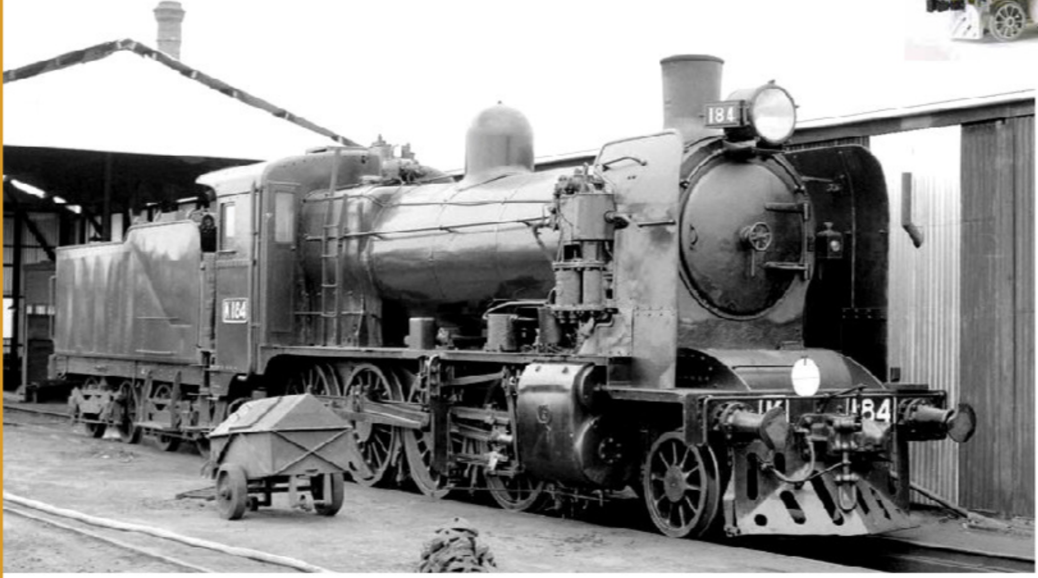
K Class Locomotive



After a thorough evaluation by our engineering team, the VR K class model is being upgraded to the same standards as our D3 model. Fortunately, the D3 and K class share the same tender type, so the engineering changes are limited to the engine unit only.
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Please contact Eureka Models before 31.12.2021 to confirm K class running number selection.
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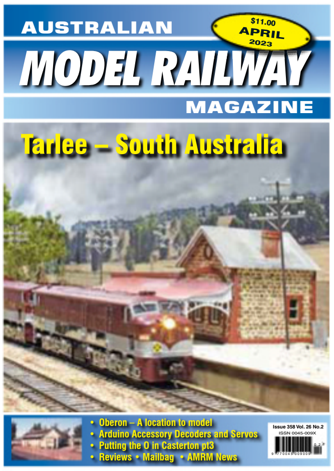
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ISSN 0045-009X

ON THE COVER:
Double headed 930 class locomotives draw a down goods into the platform at Tarlee, as a heavy rail clouds gather.
Photo AMRM Team

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Comment

By Scott Fitzgerald

Are Australian Modellers Detail snobs?

Over the years Australian Modellers have been provided with mass produced models with ever increasing detail. Sometimes to get more detail manufacturers have gone to the gimmick level of detail. In the UK it seems most prevalent with the Dapol class 59 diesel in OO being released in 2022 with sprung opening cab doors, something that was first tried in the North American market well over 15 years ago. So too Accurascale, with their class 55 Deltic diesel locomotive in OO with back lit lighting on the driver's console! They also had engine room lights which illuminated engine block detail (low relief). With cost ever increasing it does beg the question, how far can this go before it becomes unsustainable?

So, is it the modeller that is driving this increased level of detail, or is it technical, with more intelligent production techniques?

Clever tooling design processes probably play a big part in increased model detail fidelity.

In the early stages of mass production, modellers (myself included) didn't like cast or low relief air hoses on cowcatchers. The manufacturers listened, and today we expect individual air hoses to be applied to our models.

However, the modelling demographic is not as clear cut as it seems. Detail is driven by different factors and hobby-related goals.

The hobby collector essentially collects models, placing them on a shelf or display case and admires the handiwork. It would be fair to say detail is high on their list of demands, but I am not sure if gimmick detail is a demand. Cost is probably not a factor, their locomotive to wagon ratio would be low.

The branch line modeller would also demand a high level of detail (they can afford to be a detail perfectionist). With a low rolling stock count, they can devote time to enhance a model and achieve a high degree of detail (rivet detail inside an open wagon for example). There is probably also a reliability component. Cost, given the low rolling stock count, would not be too much of an issue, noting there are always exceptions to a rule!

The beginner modeller would not be too concerned about detail. They would be expected to be more price driven, definitely happy in the sub-$300 locomotive price bracket. Reliability would also be a requirement.

The operator modeller (I put myself in this category) would have a layout or be a member of a large club. Their priorities are models that are robust and reliable. They replicate full train consists and are happy to modify r-t-r models, build kits, to model consists correctly. They have no issue with weathering a $600 locomotive. They are happy with locomotives which are DCC friendly or are already sound equipped. Modelling complete trains means that they invest a lot in rolling stock, maybe around the one locomotive to five to ten wagon ratio. It would be fair to suggest that increased levels of detail are appreciated but not at the cost of reliability. Detail that is fragile and breaks off easily is probably a frustration. Due to the high wagon count, cost is more of a factor.

Is there room in the Australian r-t-r industry for less detailed models at a lower price bracket? Given the relative success of the Australian Railway Models New South Wales Government Railways C38 class steam locomotive, maybe there is demand for less detailed models at the right price point.

Manufacturers in the USA have developed models of the same design with tiers of detail. The top level has all the bells and whistles, they also offer a low detail version, available without individual handrails or various features. These models are robust and reflect a lower price point. The most obvious candidates would be bulk wagons which operate one type of wagon in a full consist, such as Grain or Coal wagons, or maybe Iron Ore cars?

Granted, this will require extra oversight by manufacturers as effectively it's an additional line of product, for what might only satisfy maybe two parts of a larger market. Or are we just detail snobs and want everything and more?

Give us feedback at: amrmfeedback@tpg.com.au

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The Annual Membership Fee for SCMRA is $66.00 from March to February and the Joining Fee is $20.00, which includes the membership data pack. Applications must be received by the first of the odd month to meet our mailing list deadlines. For applications received between the 2nd September and the 2nd January the Half Annual Fee is $33.00 plus the ($20.00) Joining Fee (does not include October issue of AMRM). All fees are GST Inclusive. Membership entitles you to participate in the activities of the Association, to receive AMRM and our regular newssheet *Booster*. Standards, Recommended Practices and Information Sheets covering model railway practice are included in the joining kit together with a vinyl ring binder and are also issued at regular intervals.
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AT ISSN 0045-009X

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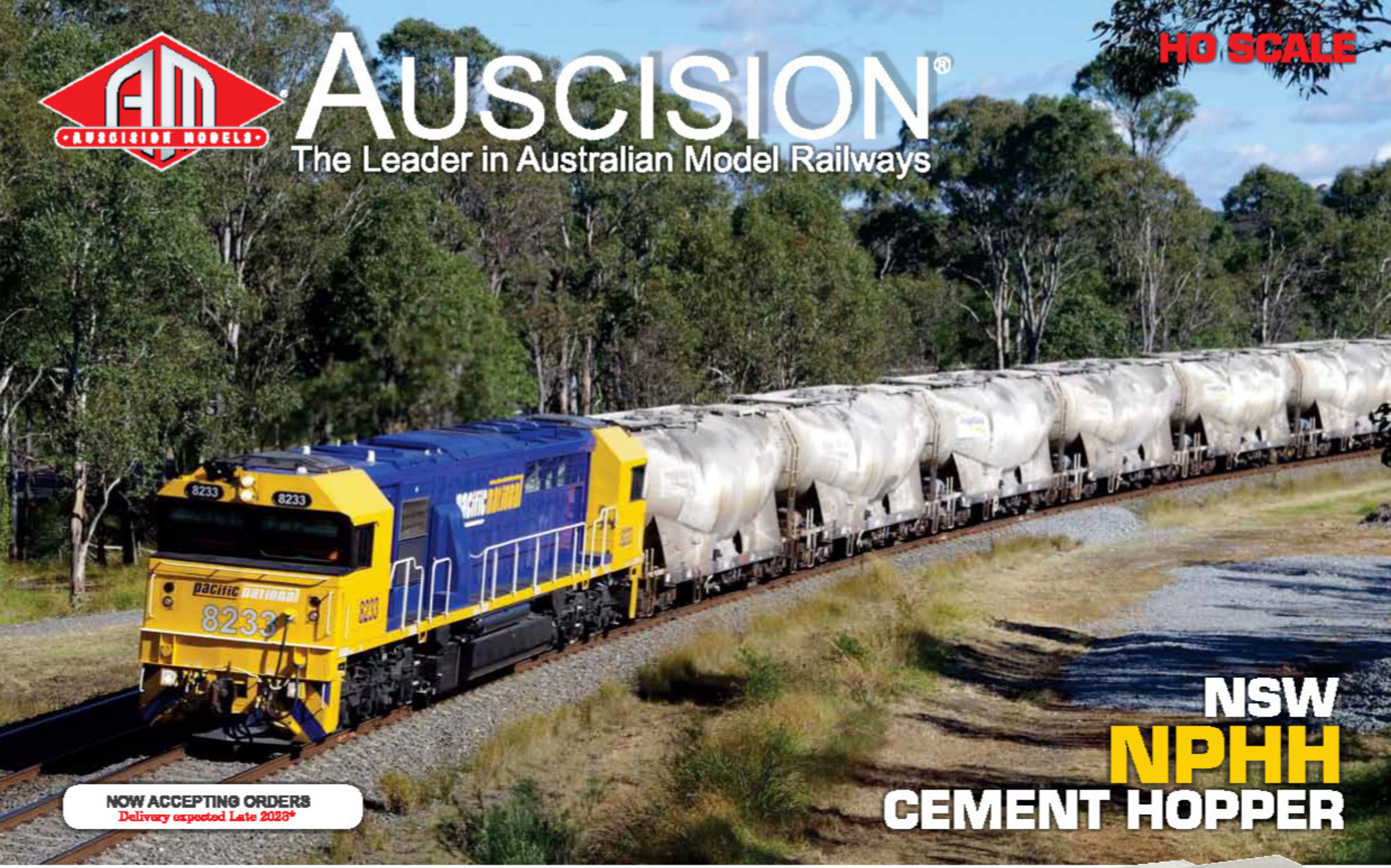

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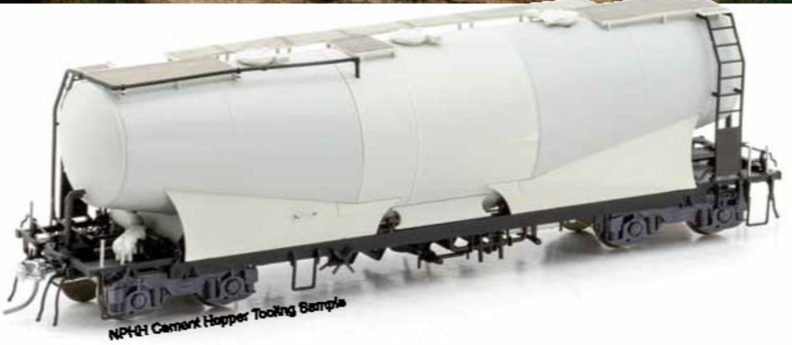

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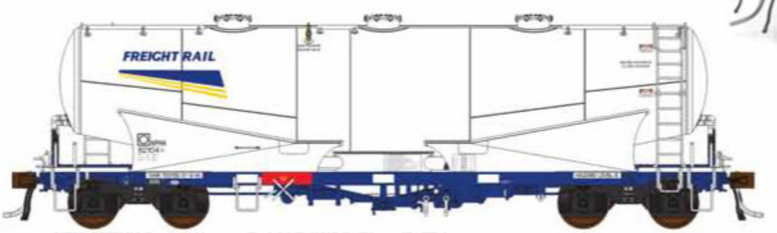
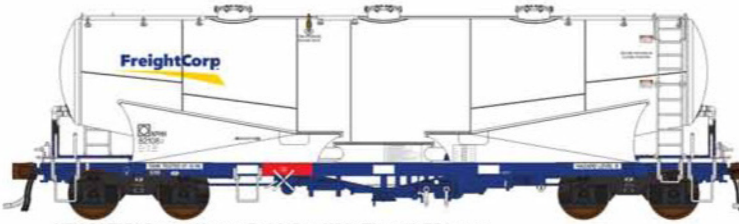
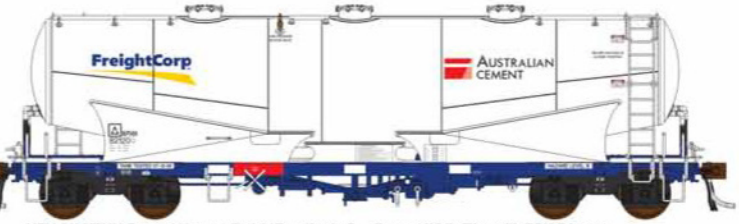


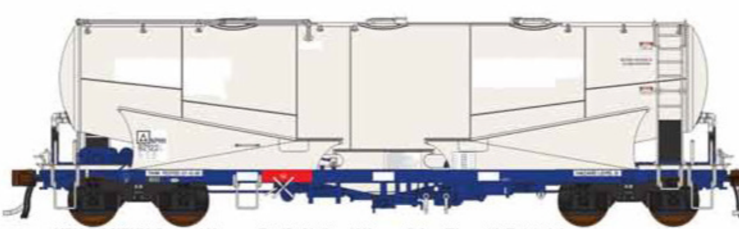
NPH-1 NPHH Cement Hopper, Freight Rail White/Blue with FR Logos



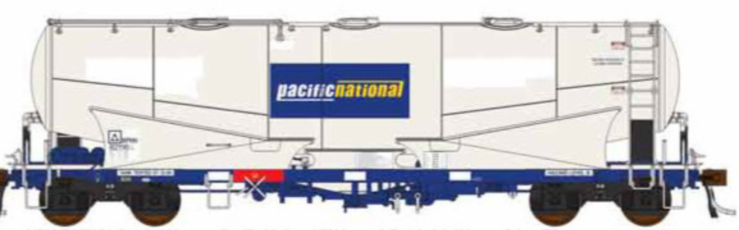
NPH-2 NPHH Cement Hopper, FreightCorp White/Blue with FC Logos



NPH-3/4 NPHH Cement Hopper, FreightCorp/Australian Cement White/Blue with FC/AC Logos



NPH-5/6 NPHH Cement Hopper, Pacific National Wagon Grime/Blue with Patch Job



NPH-7 NPHH Cement Hopper, Pacific National PN Logo & Patch Job Wagon Grime/Blue

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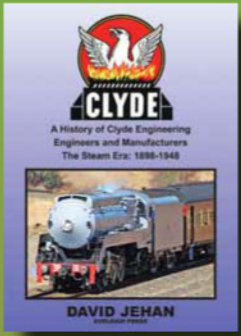

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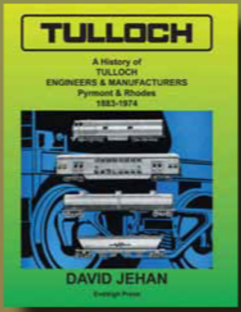

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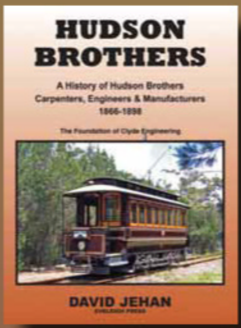

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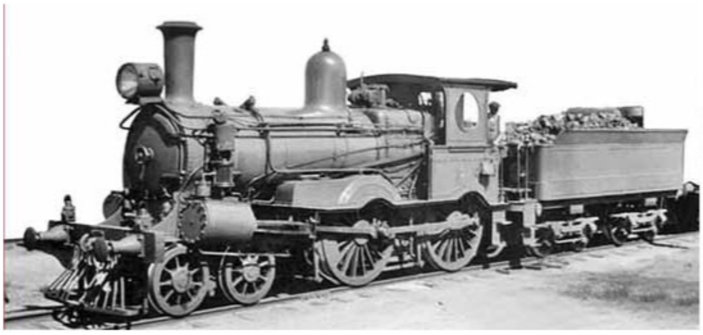
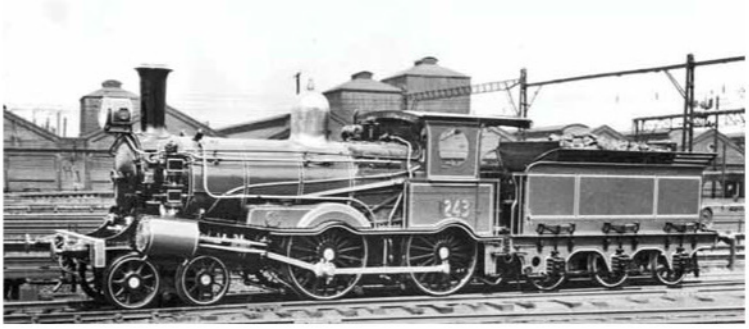

1214, lined Brunswick Green, Baldwin bogie tender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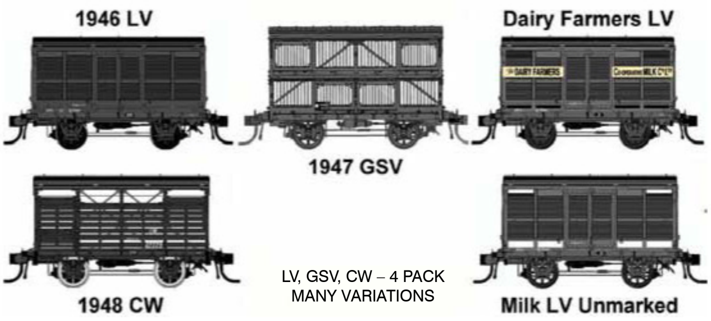

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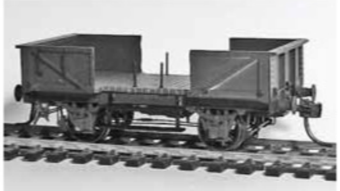

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ROCO is starting the year 2023 with a broad program of new items and highlights!

The two Edition models of the class P8 steam locomotive and the DB class 288 double diesel locomotive will start things off. Both series impress in the premium Edition range with a particular filigree design and many technical refinements. These include the newly developed dynamic steam on the P8 or rather BR 38 and the rotating fan wheels on the BR 288 diesel locomotive.

ROCO congratulates the Austrian Federal Railways with a particularly premium program of ÖBB models. These include the class 310 steam locomotive, with its blue tinplate paint scheme and the Railjet in the «100 Years of ÖBB» special design. All models are one-off editions in the anniversary year!

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Our 2023 novelties:

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▸ Electric locomotive 185 077-5, DB AG	70332/70333/78333
▸ Electric locomotive Re 4/4 II 11108, SBB	7500002/7510002/7520002
▸ Electric locomotive class E.432, FS	70466/70467/78468
▸ Steam locomotive 310.20, BBÖ	70330/70331/78331
▸ Steam locomotive 038 509-6, DB	71379/71380/79380
▸ Steam locomotive 38 2471-1, DR	71381/71382/79382
▸ Diesel-electric double locomotive 288 002-9, DB	70115/70116/78116
▸ Diesel locomotive T 466 2050, CSD	7300003/7310003/7320003
▸ Gas turbine multiple unit class 602, DB	7700002/7710002/7720002

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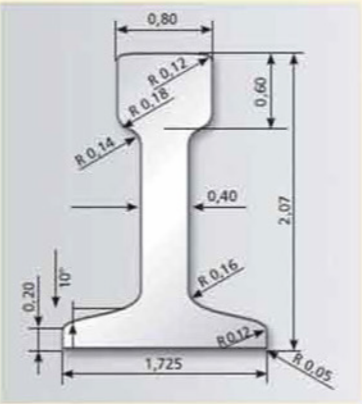
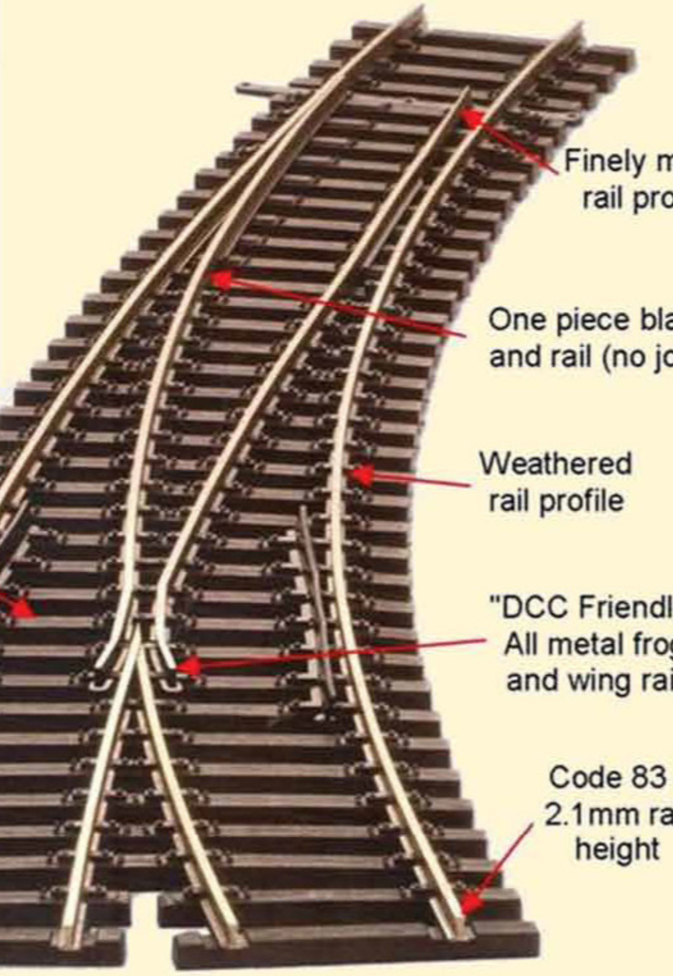

0,80
R 0,12
R 0,18
0,60
R 0,14
0,40
2,07
10°
R 0,16
0,20
R 0,12
1,725
R 0,05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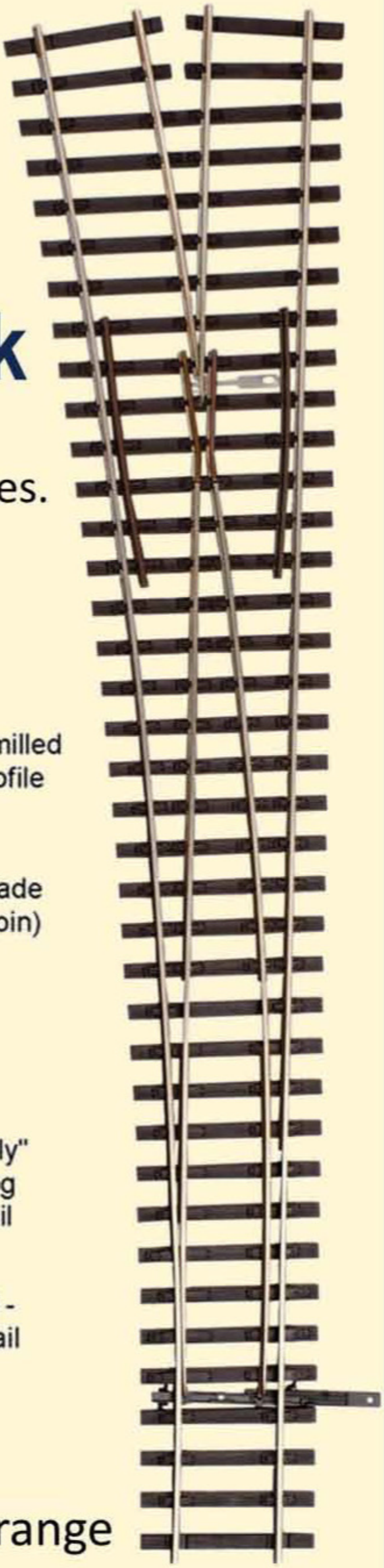

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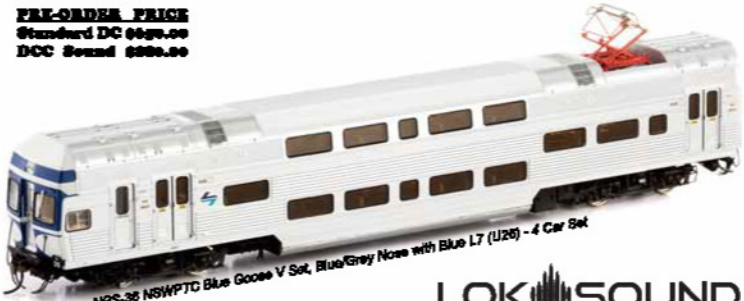

NPS-38 NSWPTC Blue Goose V Set, Blue/Grey Nose with Blue L7 (U26) - 4 Car Set

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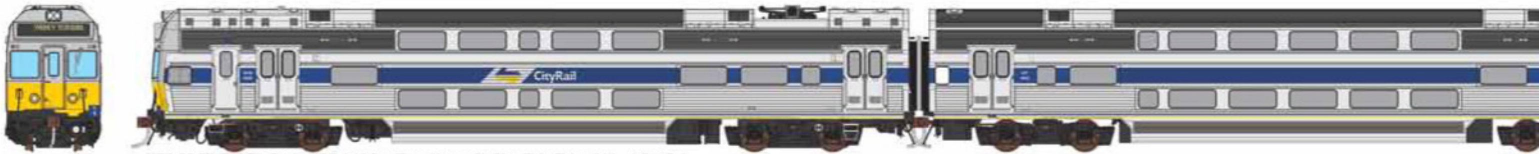
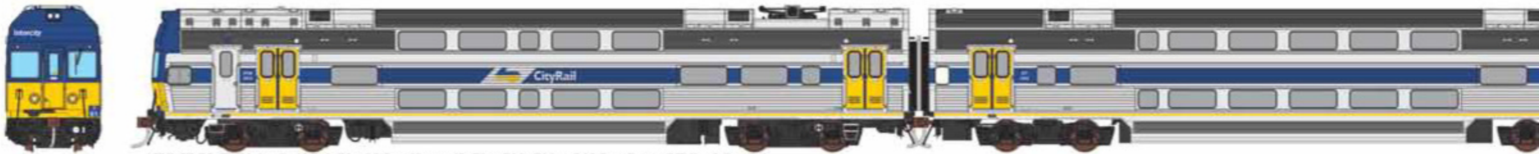
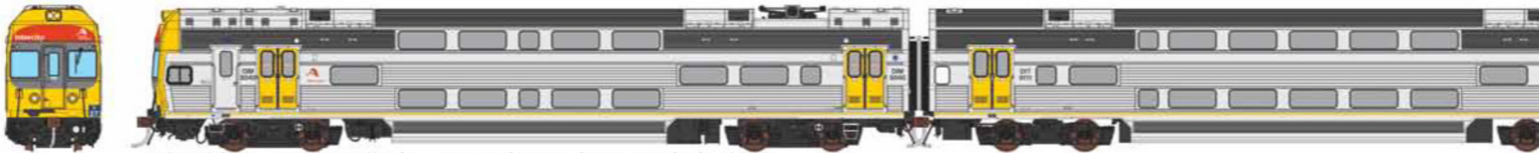


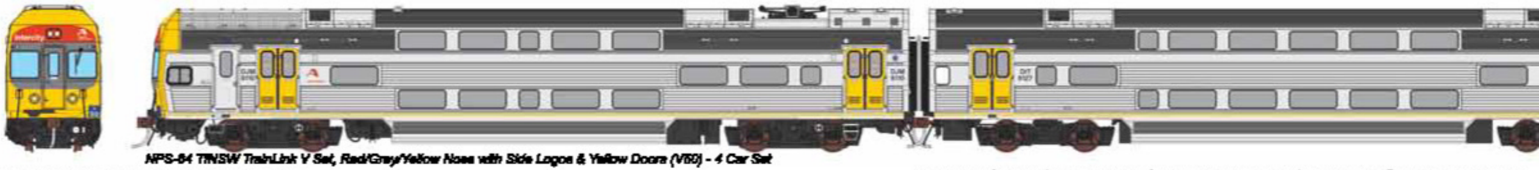
NPS-66 CityRail CityDecker V Set, Yellow/Grey Nose with Blue Side Stripe (V1) - 4 Car Set



NPS-67 CityRail Intercity V Set, Blue/Yellow Nose with Blue Side Stripe & Yellow Doors (V81) - 4 Car Set



NPS-68 TfNSW TrainLink V Set, Red/Grey/Yellow Nose with Side Logos & Yellow Doors (V27) - 4 Car Set



NPS-64 TfNSW TrainLink V Set, Red/Grey/Yellow Nose with Side Logos & Yellow Doors (V60) - 4 Car Set

*Model details, delivery dates & prices subject to change without notice.

Artwork shown for livery reference only. Number fonts, body versions and some finer details may differ on the production models.

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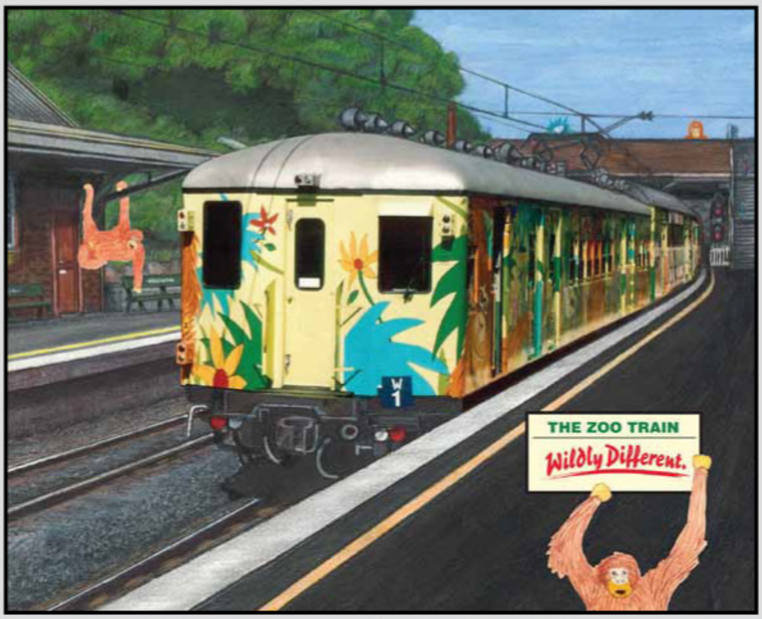

Sputnik single deck trailer - Tuscan Red

Sputnik single deck power car - Tuscan Red

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PC-601	SAR ELX
PC-602	VR VOCX
PC-603	V/Line VOCX
PC-604	AN AOBX
PC-605	SAR ELX

VKOX/RKUX/AXBX/RXBX

PC-610	V/Line VKOX
PC-611	V/line RKUX
PC-612	No logo RKUX
PC-613	AN AKBX
PC-614	AN RXBX

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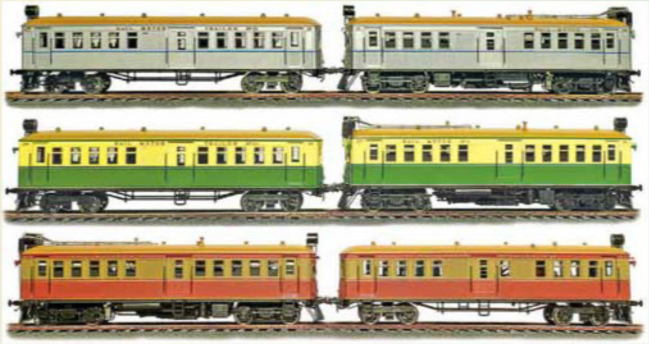

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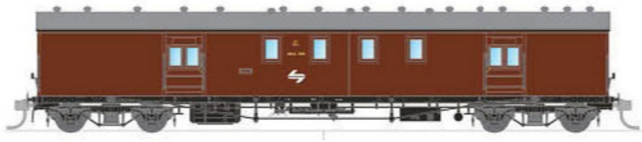

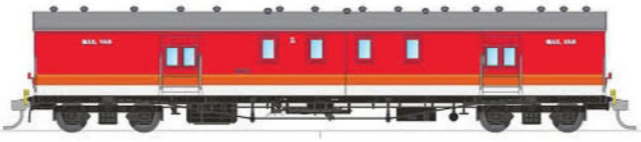

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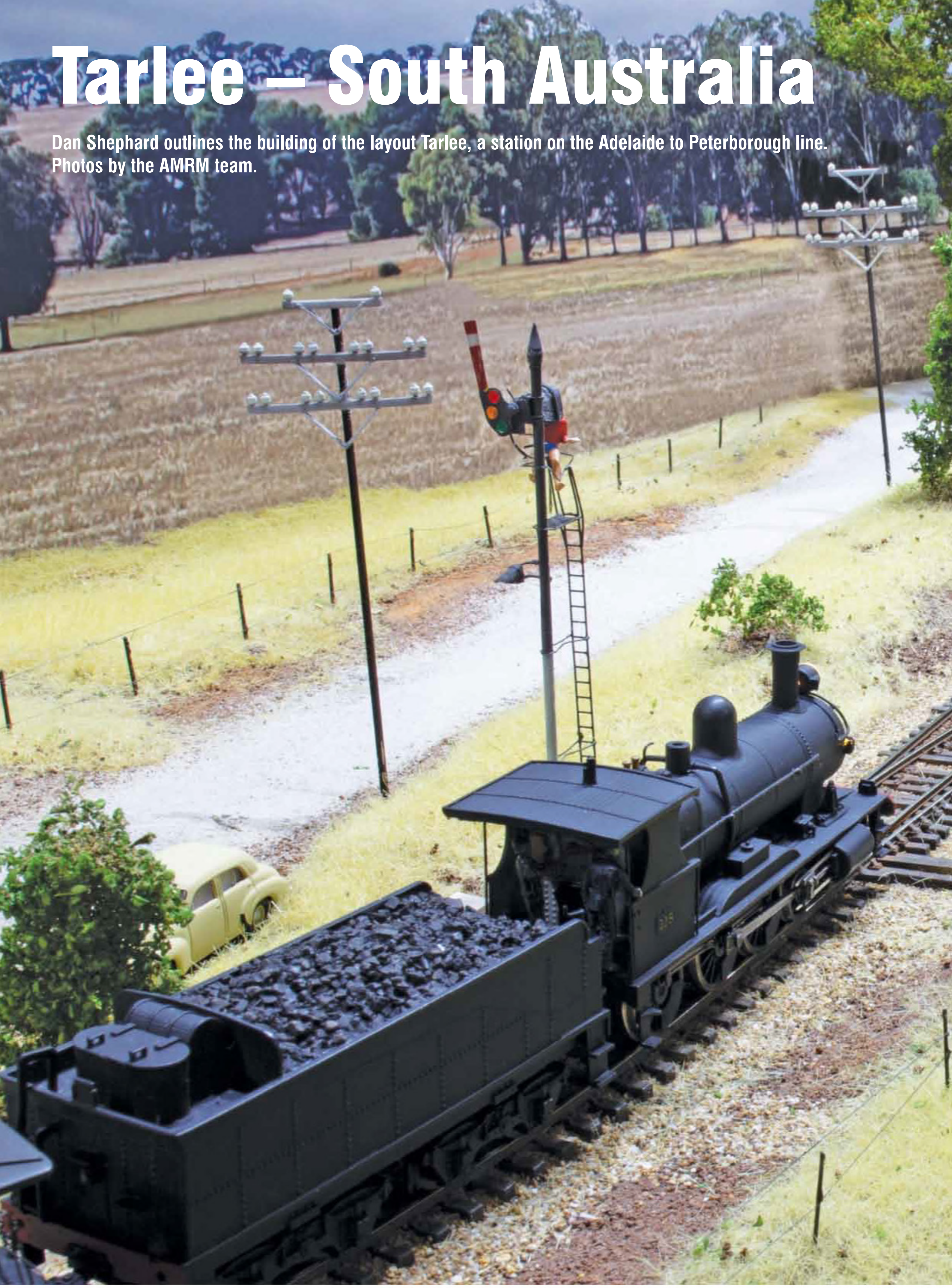
Tarlee – South Australia

Dan Shephard outlines the building of the layout Tarlee, a station on the Adelaide to Peterborough line. Photos by the AMRM team.



The Tarlee layout was conceived between Elite Model Services (EMS) and a client in the early part of 2021. The idea was for us to build a layout of a show quality level, depicting a town on the now dormant line between Adelaide and Terowie. Many spots were considered, including Riverton and Hamley Bridge, but for the truncated timetable we were given and the real geographies of the areas not being conducive to the space we had in mind, we settled on Tarlee.

We found that this location had many benefits, including a quaint small footprint station building, cattle and stock pens, with grain silos. The final decision was to model the station with approximately one third compression.

Field trips soon followed and measurements were taken of every structure and infrastructure detail, right down to the relay contacts on the points. All of these small details were 3D modelled in Fusion 360 and 3D printed in resin.

Base Boards

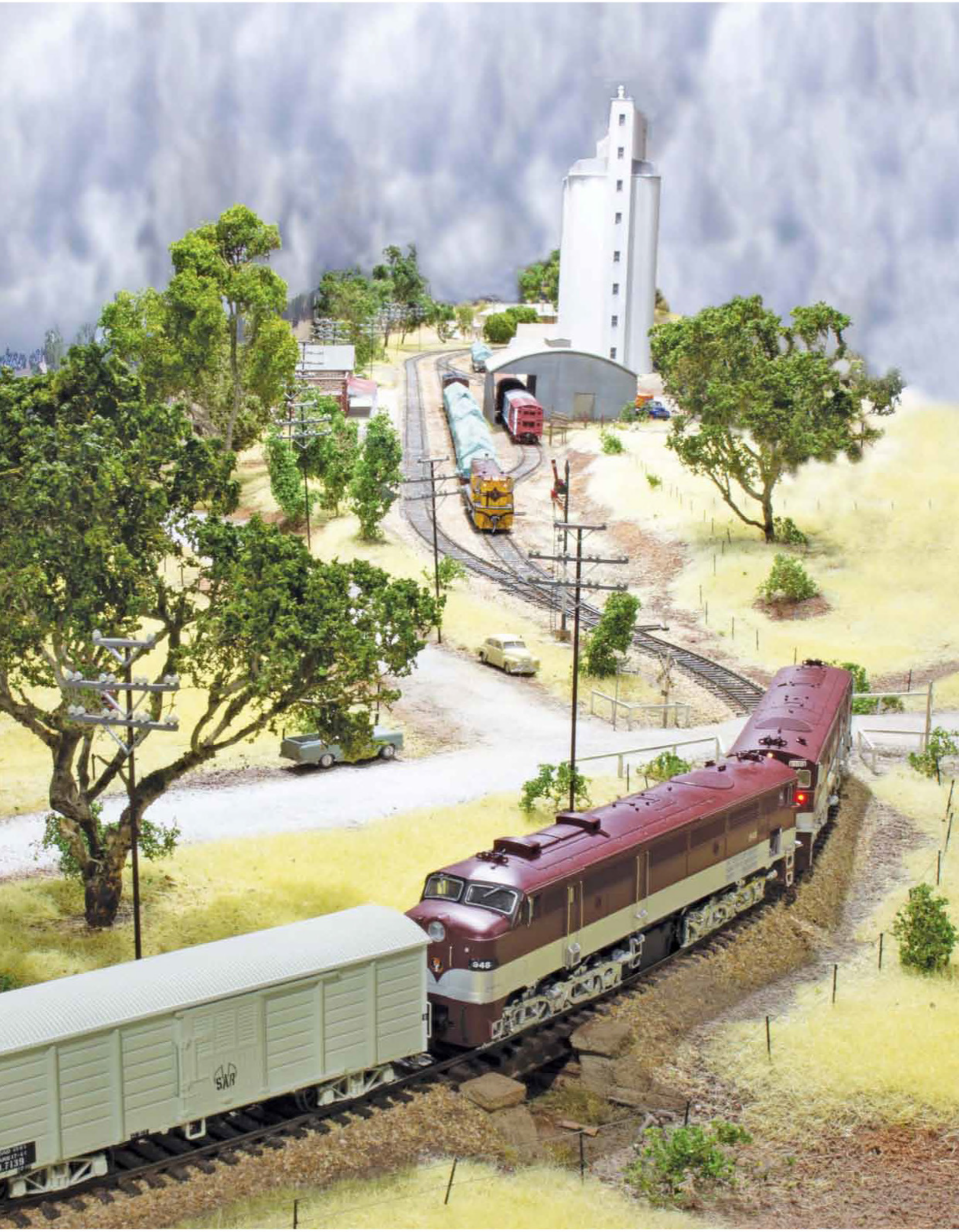
The framework is a basic L girder design, with joists placed at 300mm intervals and the ends trimmed to the final shape of the front fascia. This was topped with high density foam panels and cut to shape. The fascia is 3mm Medium Density Fibreboard (MDF) smoothed and painted with a neutral grey colour as to not distract from the sceniced areas.

Trackwork

From the outset the brief was to include hand laid track. This was done using custom designed laser cut sleepers, a relief was laser etched to locate 3D printed sleeper plates, of which there are over 6000, hand applied to locate the rail.

The rails were fastened to Printed Circuit Board (PCB) sleepers every fifth sleeper and, once completed, weathered with Rustoleum paint and oil washes,

An Rx class locomotive crosses the up Brill working back to Adelaide.



The double-headed 930s ease their train north into the Tarlee yard while an 830 class locomotive shunts the grain silos.

with a final application of weathering powders. The track is laid on 3mm cork roadbed to portray the shallow ballast profiles of the area.

Scenery

The basic land forms were created with additional pieces of high density foam stacked and small undulations made with a butane torch to melt and shrink the foam.

Careful observation of all the small culverts and drainage structures was made and included on the layout exactly to scale. The land forms were then top coated with a layer of Sculptamold and painted with acrylic paint. Various lengths of static grass were applied, along with real dirt harvested from the actual location. Powders were applied for the more hard-compacted areas and many small weeds were hand made from tiny off cuts of Teloxis branches. All Scale Scenics leaf material was applied to the tips of these using spray adhesive.

The trees have gained considerable attention at shows and were built by James Pennington, with a process we developed based upon proven techniques. An armature of salt bush is manicured into the basic tree shape. Applied to this were trimmed Teloxis branches to fill out the canopy. These were applied with CA glue and the armature coloured appropriately. Superleaf from Scenic Express in the USA was used for the leaf material and was adhered with spray adhesive, with a final spray coat of diluted white glue to hold it all together. Some of the smaller trees were simple Teloxis branches coated with the same foliage.

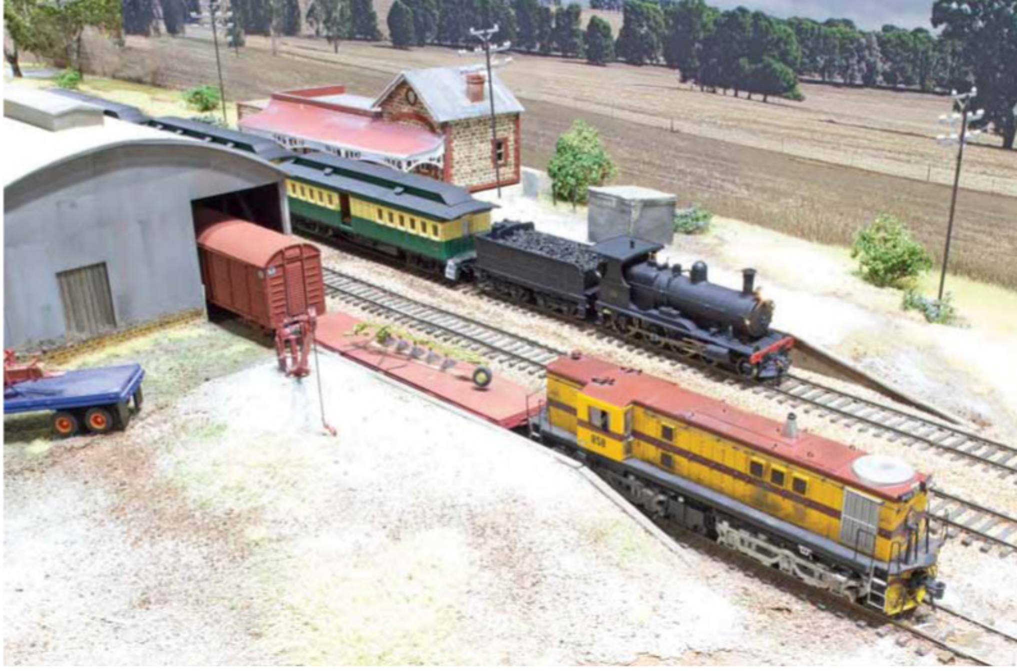
Backdrop

The stunning backdrop was created by taking images of the real area and stitched together with software and corrected for colour and continuity. This was performed by graphic designer Keith Pennington and printed out at our local Officeworks.

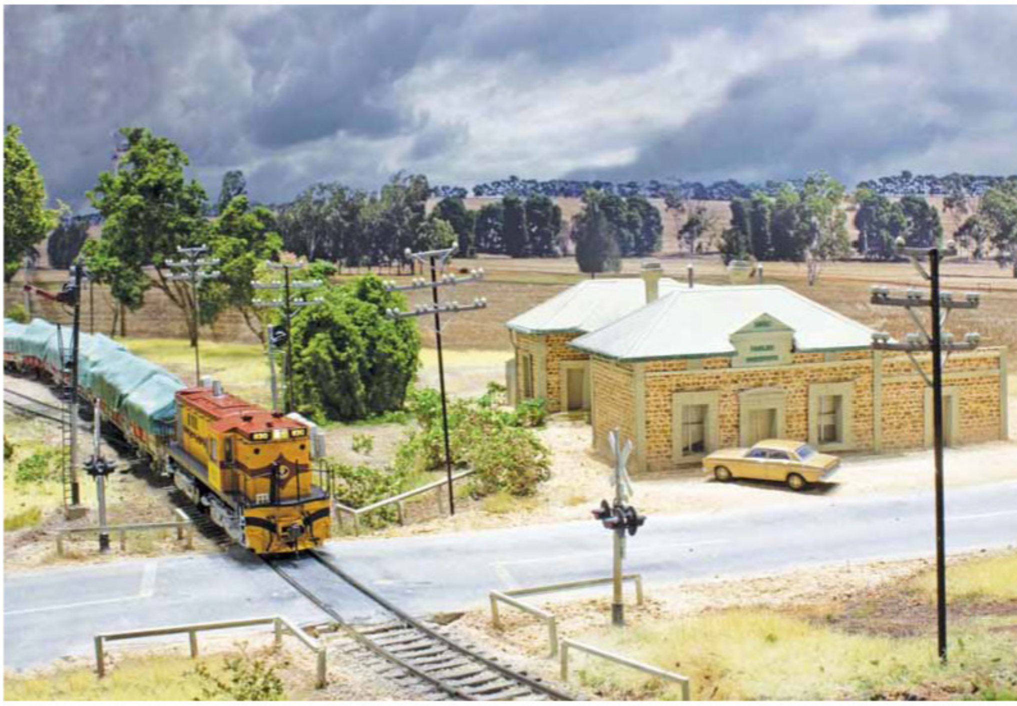
These were applied to an MDF backdrop with pine framing.

Control System

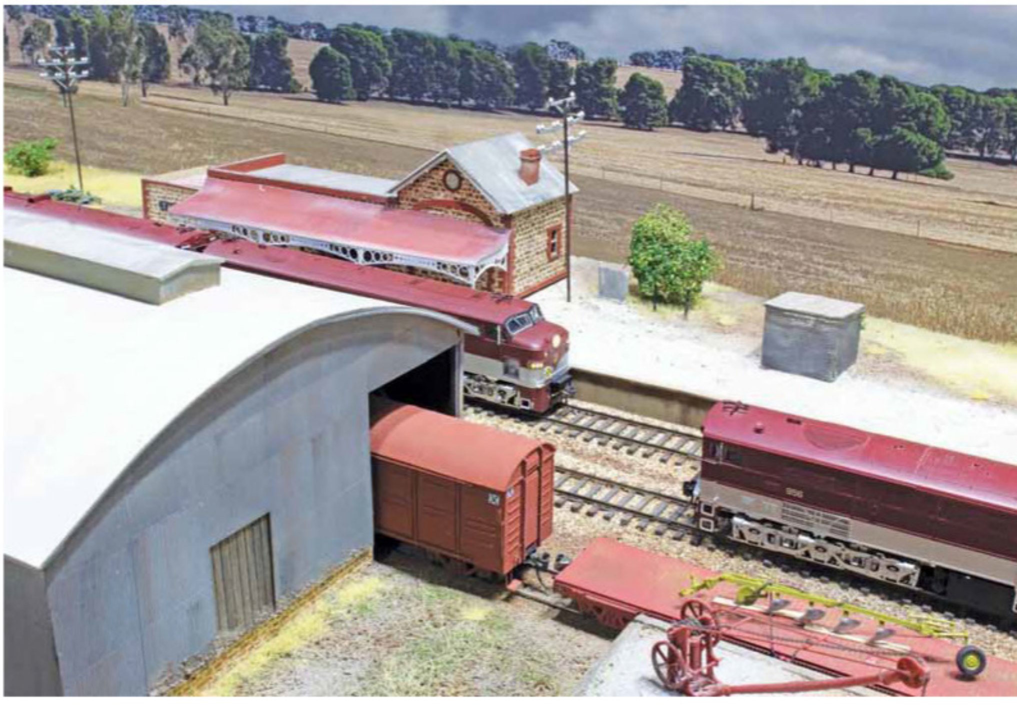
Train control Is handled by the ESU Cab Control System and WiFi throttles. This is fed to two circuit breakers, one for the staging yard and one for the visible portion of the layout. This was to prevent any mishaps in the staging area off scene affecting the visible layout.



Farm equipment arrives for unloading on the dock outside the goods shed.



An icon of the area, The Tarlee Institute stands vigil as an 830 class locomotive with a grain train heads north.



▶ *The sun breaks through the clouds on a busy day at the station as a pair of 930 class locomotives cross their trains.*

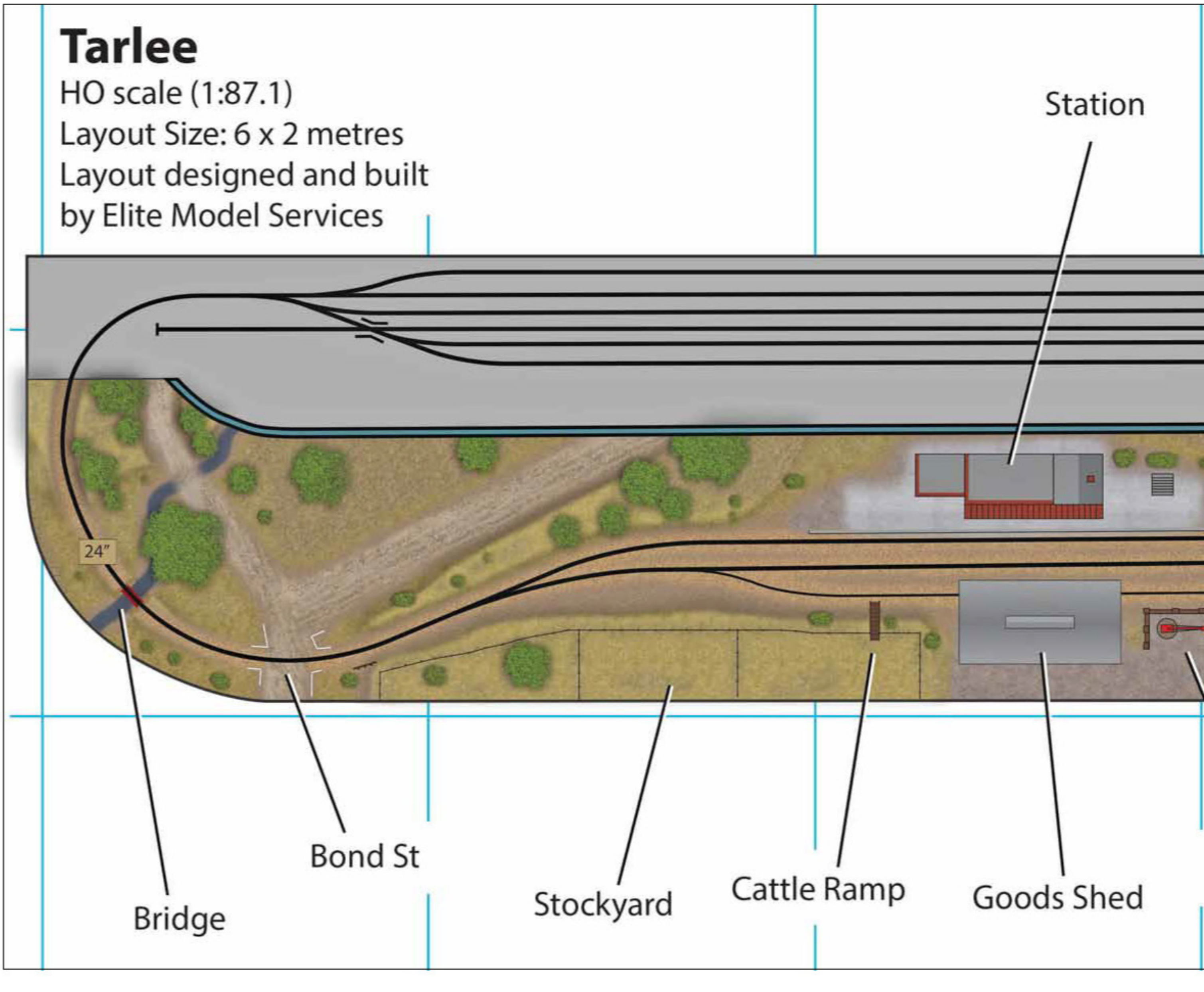
◀ *The Tarlee operating crew at the 2022 Adelaide Model Railway Exhibition. Left to right: James Pennington, Clayton Elliott, Dan Shephard and Keith Pennington.*

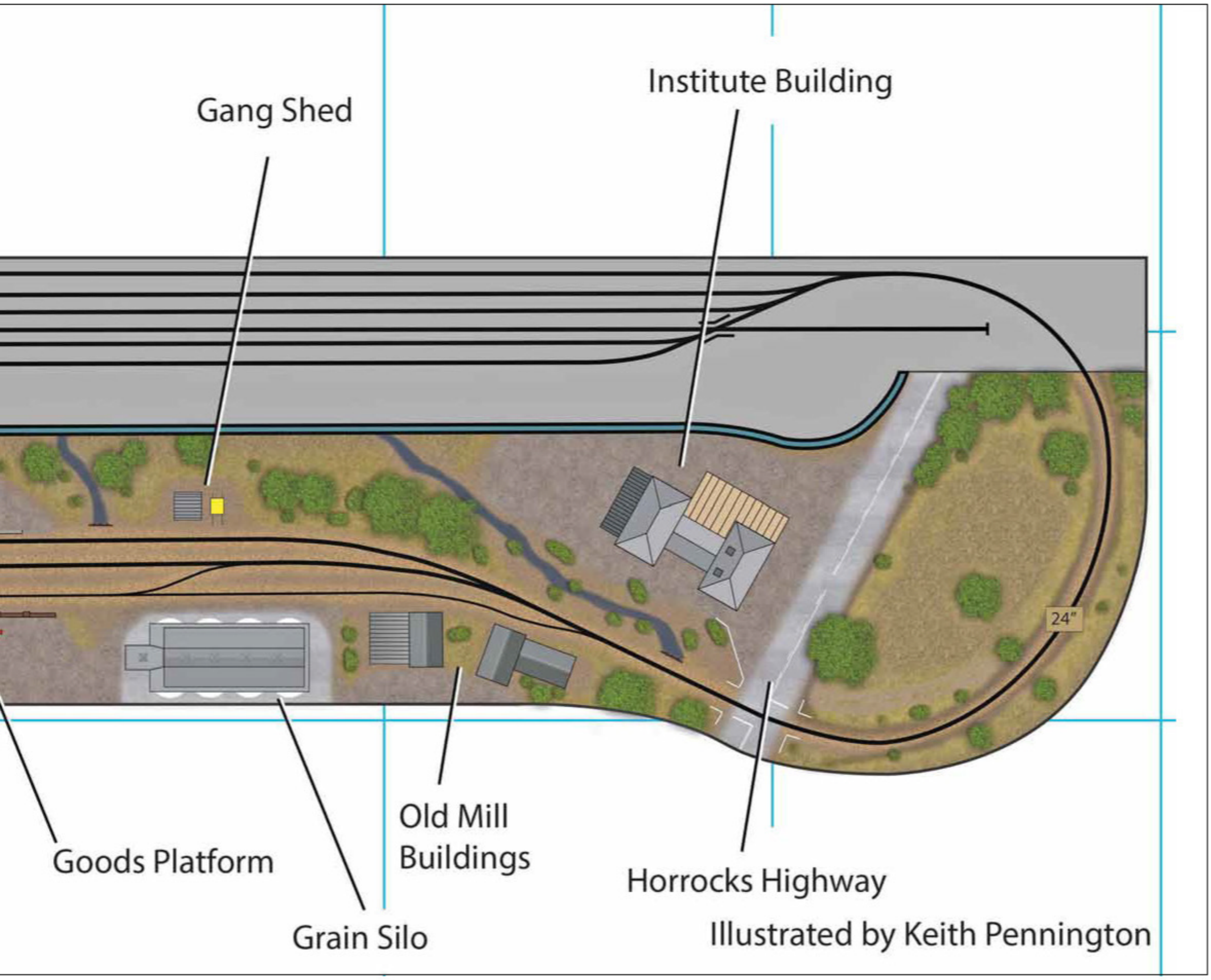
▶ *Stock cars have been spotted at the loading ramp as Alco power dominates this scene.*

Summary

The original scope for the layout was to be set in the mid 70s. However, for the shows, this has crept out to the Australian National era and the late steam era to satisfy the crowds.

The layout has performed well at multiple shows and, given that the layout was constructed in 56 days, the end result was very successful in achieving what was stipulated in the brief and was only slightly pipped for a trophy at the 2021 and 2022 Adelaide Model Railway Exhibition in Adelaide.


Tarlee
HO scale (1:87.1)
Layout Size: 6 x 2 metres
Layout designed and built
by Elite Model Services
Station
24"
Bridge
Bond St
Stockyard
Cattle Ramp
Goods Shed


Gang Shed
Institute Building
24"
Goods Platform
Old Mill Buildings
Horrocks Highway
Grain Silo

Illustrated by Keith Pennington

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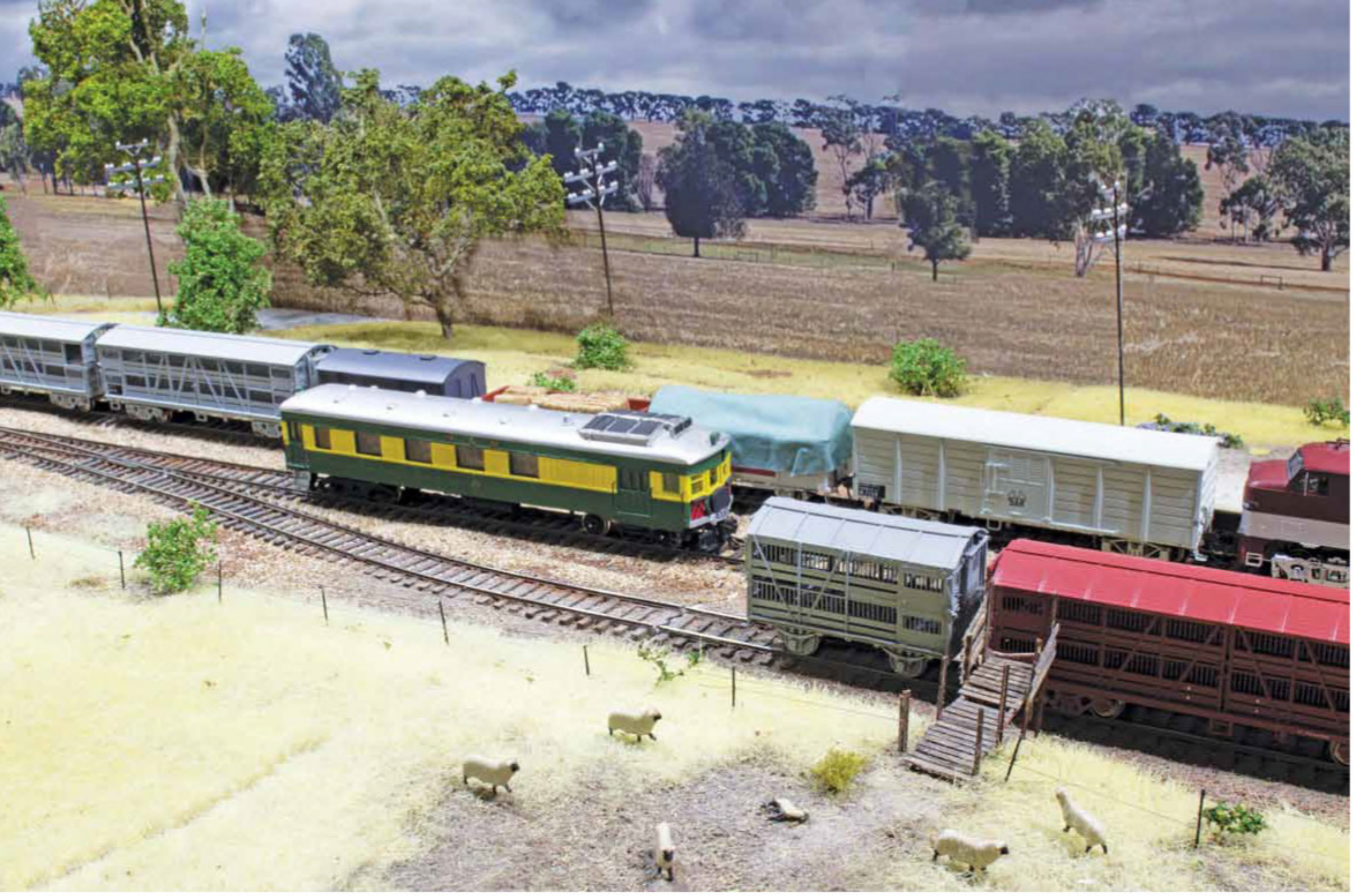


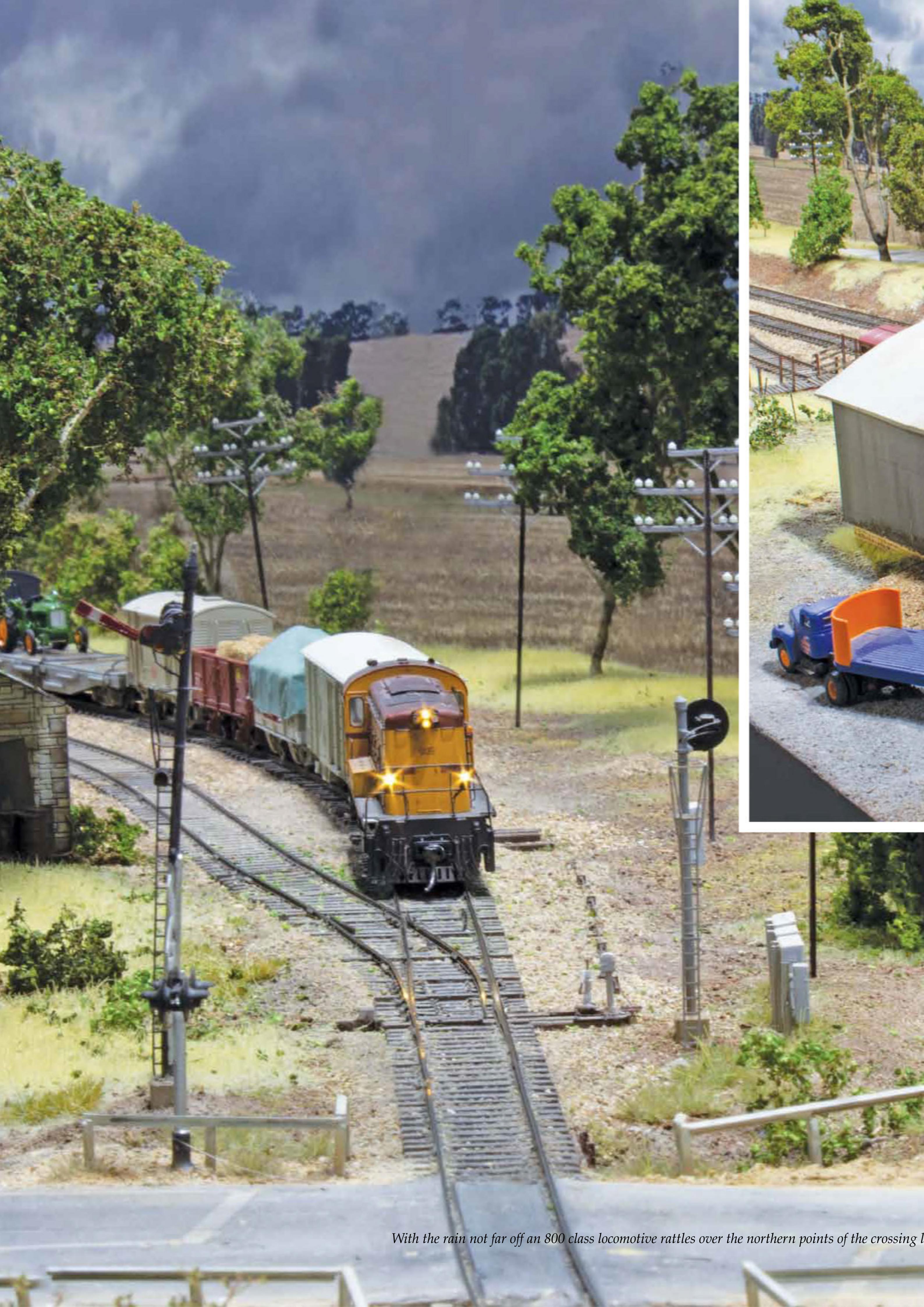
▲ *Brill railcar heads north with passengers.*

◥ *The lights flash as the Brill railcar crosses the highway on its way south into Adelaide.*

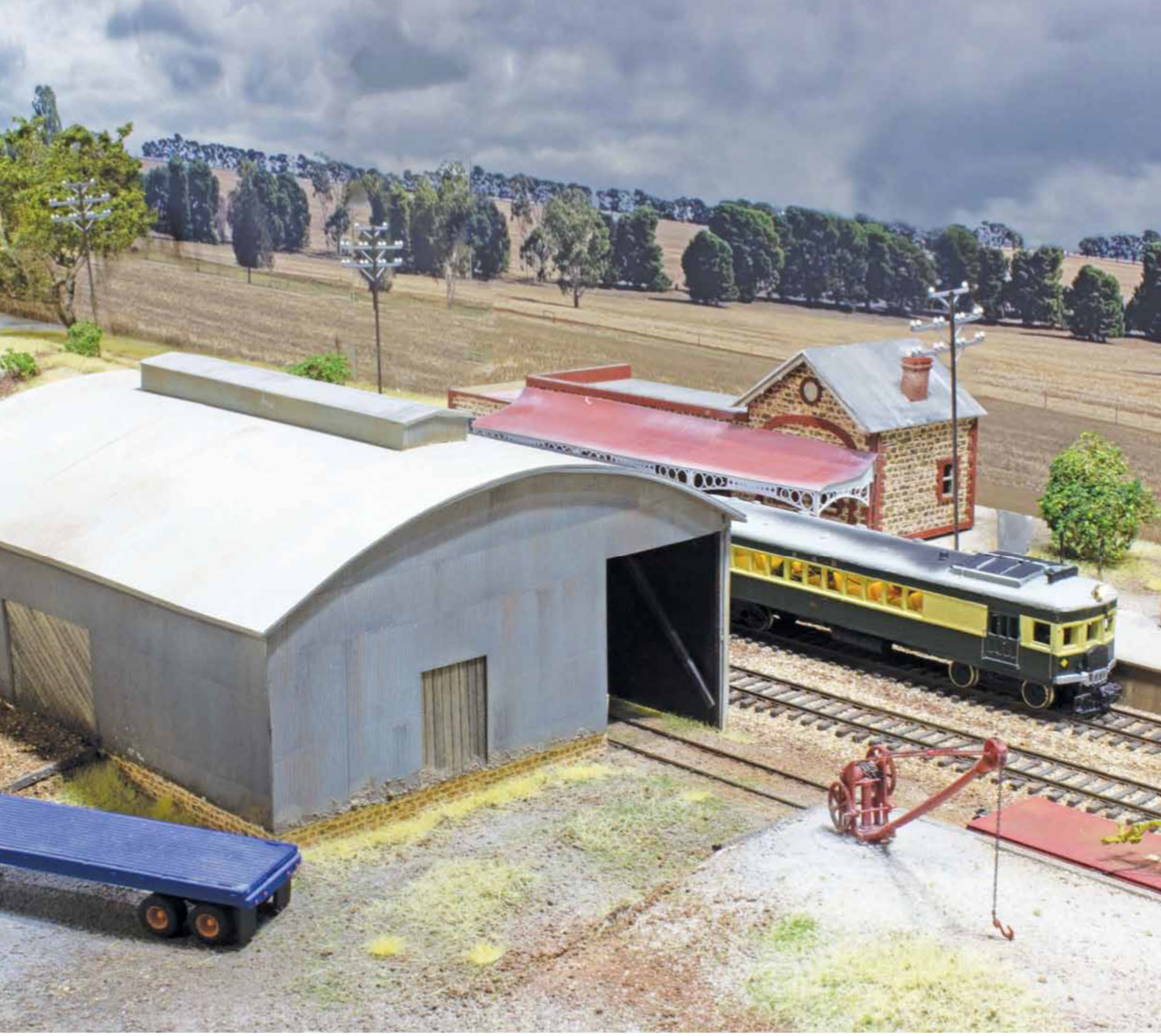
▶ *A grubby 800 pauses at the station with a mixed goods.*

RAILWAY CROSSING
TRACKS
STOP ON RED SIGNAL

502

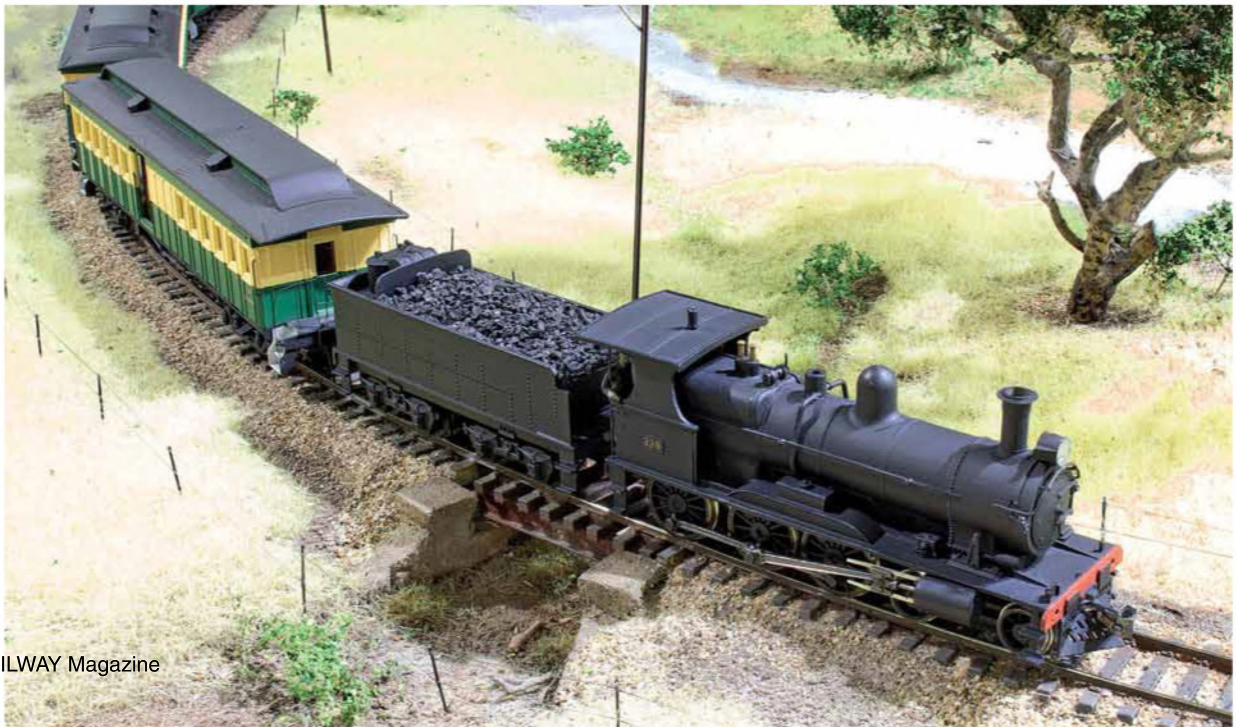


With the rain not far off an 800 class locomotive rattles over the northern points of the crossing

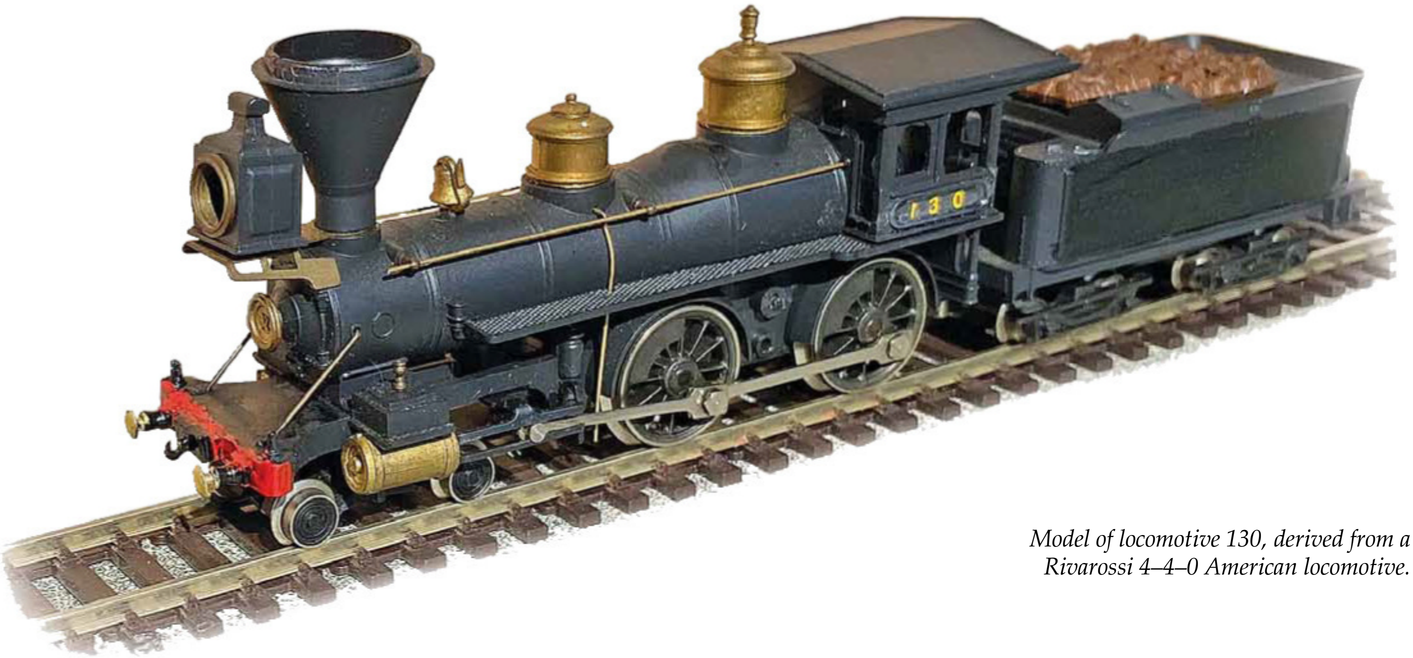


▲ *A Brill railcar pauses at Tarlee while fulfilling safe working duties.*

▼ *Rx228 passes over the small bridge at the Up end of Tarlee with a short Down passenger service.*



oop and heads to Terowie.



Model of locomotive 130, derived from a Rivarossi 4–4–0 American locomotive.

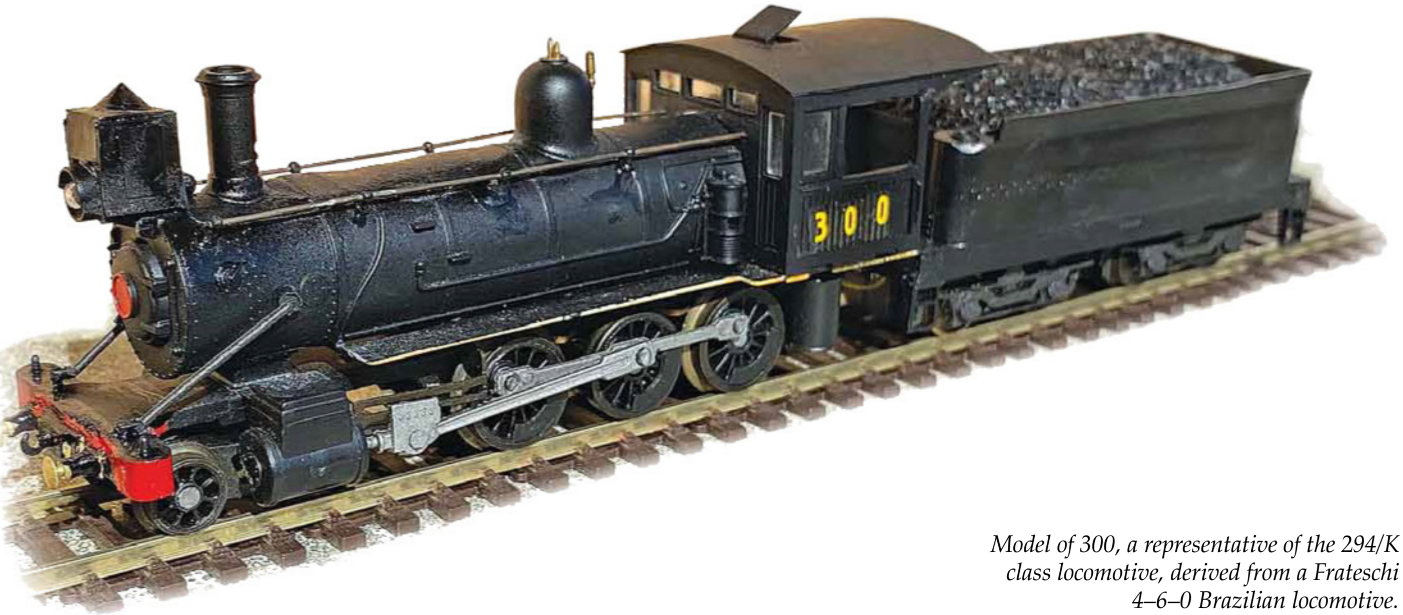
Two old-time NSWGR Baldwin locomotives for your collection

Jonathan Majer builds old-time Baldwin locomotives. Photos by the author.

Despite having a predilection for British sourced locomotives, New South Wales Government Railways (NSWGR) commenced importation of some American built locomotives in 1877 under the watch of the NSW Locomotive Engineer Robert Burnett. The first to arrive was a 4–4–0 No. 105 built by the Baldwin Locomotive Works in Philadelphia. Many other models from this manufacturer followed, both in NSW and some of the other states. Since Baldwin built locomotives for a wide range of countries, there was a high degree of standardisation within the various types of locomotives.

Frank Kelly wrote an article about the use of Baldwin locomotives throughout Australia (*refer AMRM issue February 2000, pp. 33-34*). The article featured photographs of some of the models that he had built or sourced, but no details were given about construction or donor locomotives. On noting the appearance of some of the NSWGR Baldwins in Garry Saunders' recent book, *New South Wales Railways in Colour 1855-1957*, I was struck by their close resemblance to some widely available models of prototypes from other countries. Being somewhat of a compulsive collector, and not being in a position to obtain some of the currently available Australian models, I realized that modification of certain overseas models could allow me to build some of these NSWGR locomotives, albeit at a 'near-enough' level, at only modest expense. This article features two models that I have produced.

The first is based on one of the first 4–4–0 locomotives imported by NSWGR. The donor locomotive is a Rivarossi locomotive that I purchased second-hand for under $100. Since this model has its motor in the tender, it was not possible to con-



Model of 300, a representative of the 294/K class locomotive, derived from a Frateschi 4–6–0 Brazilian locomotive.

vert the bogie tender to the 6-wheel one of locomotive number 105. However, a slightly later import, number 130, did have a bogie tender so I based the model on this. Very little modification was required.

The cowcatcher was cut off the buffer beam, which was then filed flat and buffers added to both ends. The European coupler on the tender was removed and a Kadee coupler was added. The only other modification that was necessary was removal of the garish triangular crest on either side of the chassis between the driving wheels. The Rivarossi model is black with gold fittings, so I left this as is to represent locomotive 130 (subsequently designated U class) in its later years. Other manufacturers, most notably Bachmann, produce models of 'old time' 4–4–0's, so these could also be considered as donor vehicles.

The second locomotive uses a Frateschi 4–6–0 Mogul locomotive. Frateschi produces this model in various Brazilian railway liveries, although an unpainted black model could probably be sourced from the Australian Frateschi supplier. This model closely resembles 294 class (subsequently K class) 2–6–0 so this formed the basis of the model. As with the previous model, the cowcatcher was cut off, the buffer beam filed flat and buffers added.

The model was converted to a 2–6–0 by clipping out the trailing wheels of the pony truck and cutting away its axle mount on either side of its frame. This did not upset the geometry of the pony truck. Also, the wide space created between the pony wheels and the lead driving wheels still resembles the space of the prototype. The only other surgery that was necessary was removal of the front dome. The handrails were first slid forwards out of their mounts. The dome was then cut out using a Dremel and cutting disc. The resulting hole was then filled with Tamiya putty and filed flat, before spraying with matching matt black paint. The handrails were then replaced in their mounts. The Frateschi model has a working cylindrical headlight, whereas the 294 class tended to have box-like headlights. This was achieved by encasing the headlight with styrene sheeting and capping it with a moulding from the spares box. Although members of this class were delivered in Baldwin's olive green, I left the model in the original black colour to represent the locomotive in its later years. The Frateschi model is a smooth runner but does suffer from the fact that the bogies on the tender are fixed and do not swivel, which can create problems on turnouts. This is not the only model that can form the basis of this locomotive. Other manufacturers, Bachmann for instance, produce this type of model, so other donor models could be considered.

These are just two possibilities for Baldwin models that could be adapted relatively inexpensively. There are several other possibilities. For instance, Frateschi produce a 2–8–0 Consolidation that could form the basis of an O class locomotive. Readers who are considering these modifications are strongly recommended to consult the excellent resource book mentioned earlier in this article.

Exhibition tips and tricks

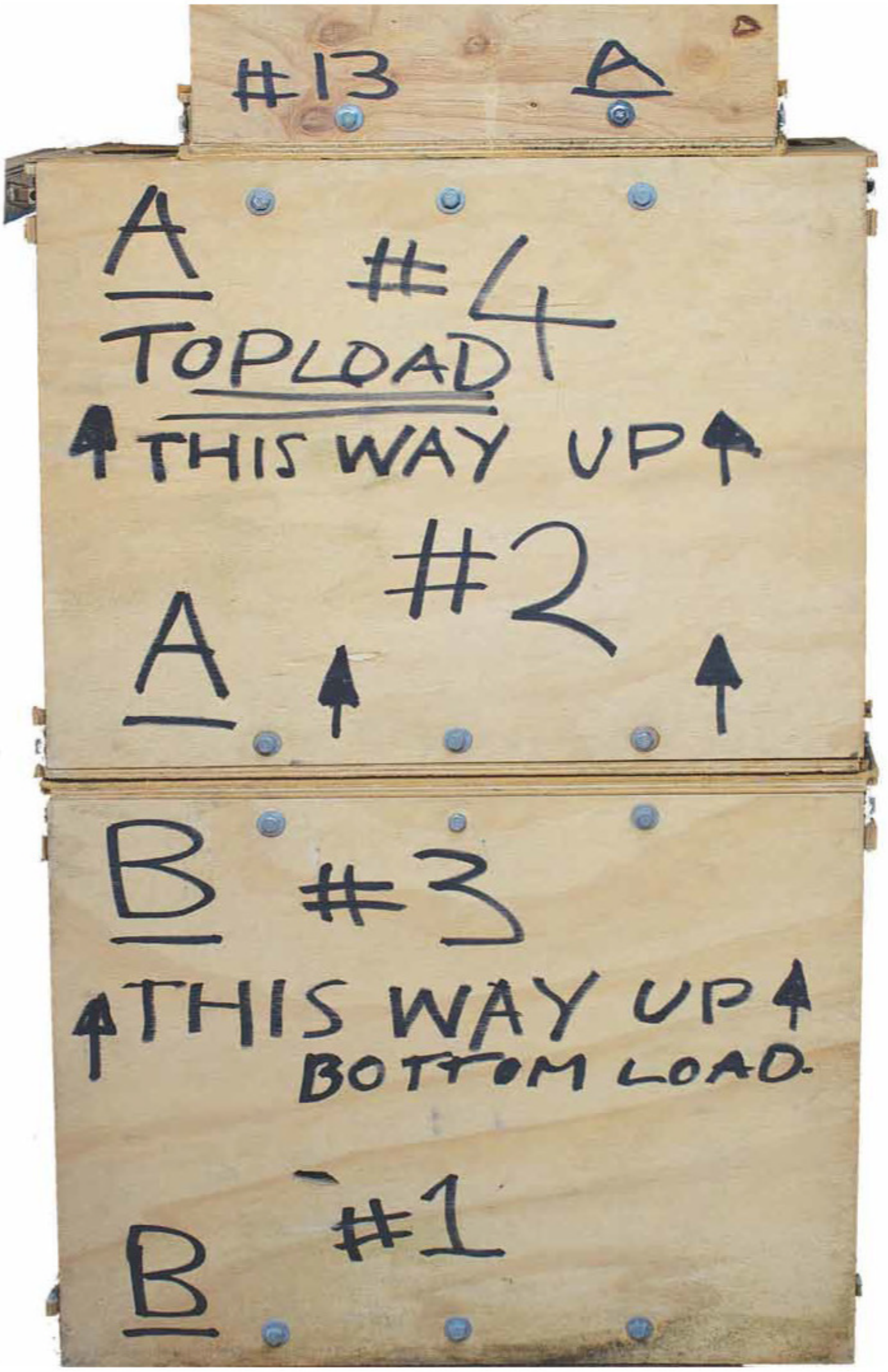
The AMRM Team presents some useful tips and tricks for exhibiting your layout. Photos by the author.

Exhibitions can be logistically complicated, sometimes challenging, as all sorts of problems can crop up attending an exhibition.

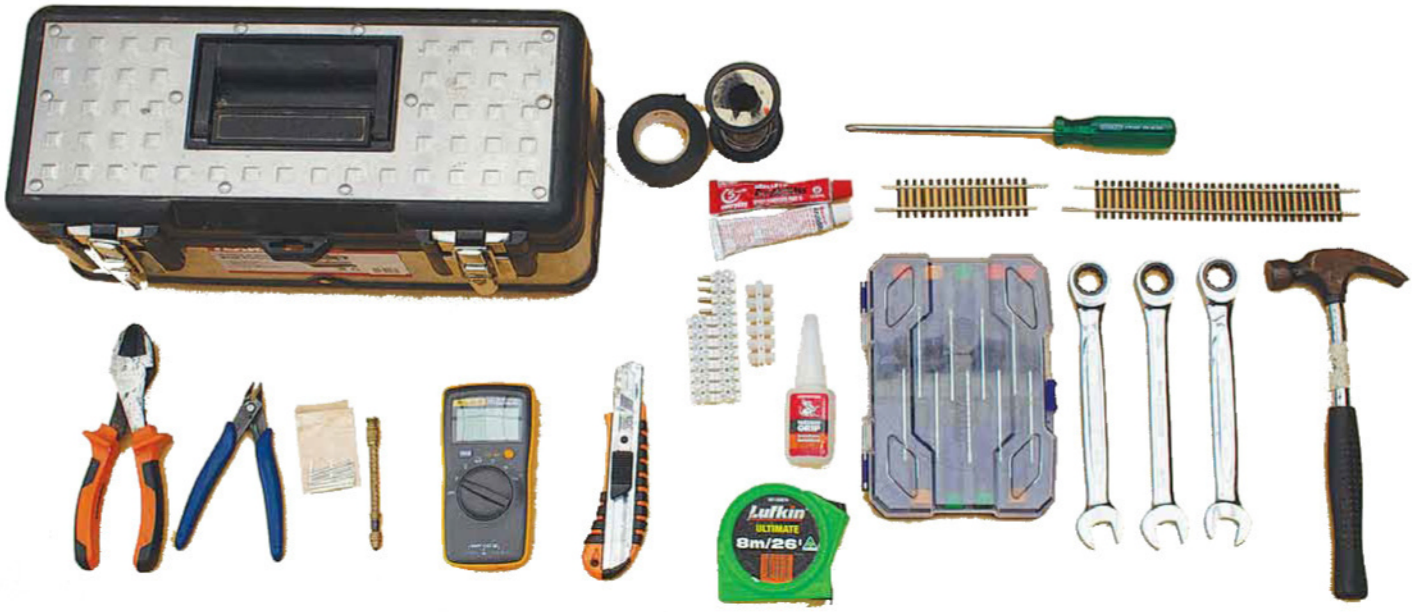
Over time the AMRM Team has developed several techniques and tips for having a successful exhibition; one key element is simplification.

Layout design and Wiring

We developed board construction which has a smooth base with access holes, and integral back drops and lighting. (*See AMRM issue June 2021 No.348 'Cameo Boards'*). These construction techniques protect the wiring from damage and reduce set up time as everything is



The blanking ends for 'Murray River Bridge' layout boards, the instructions showing which board number and which end and how it should be loaded into the trailer.



The exhibition-only 'fly away' tool kit example, note the three rachet spanners for bolting up the layout blanking ends.

already incorporated into the layout boards, lighting, backdrops etc – almost plug and play!

DCC operation has simplified wiring, using simple rules such as black wire on the inside, red on the outside, meaning that trouble shooting is easier.

Ensure that you have built in redundancy to your wiring. Use terminal blocks and through bus wiring; this way you are not relying on one set of 'droppers', or have one point of possible failure.

Ensure that there is easy access to all terminal blocks.

Simplified wiring will mean it's easy for anyone to trouble shoot a layout. Therefore, the 'wiring' guy doesn't have to be at every exhibition.

Make instructions big, clear and easy to read. For example, we have blanking ends on one of our layouts, the bottom of all boards designated a board number and A or B ends. These are reflected in the blanking ends; large lettering and directions for stacking just make the process easier.

One size fits all

If you are using bolts as fasteners, use only one size of bolt. This reduces the number of loose items you need to bring to an exhibition.

Be prepared to assemble or disassemble a layout without the use of power. Battery drills can go flat, so make sure you have a backup that does not need power. Keeping a bunch of rachet spanners in the tool box (matching the size of your bolts) can be invaluable in helping the team set-up or take down.

Just the essentials – tooling

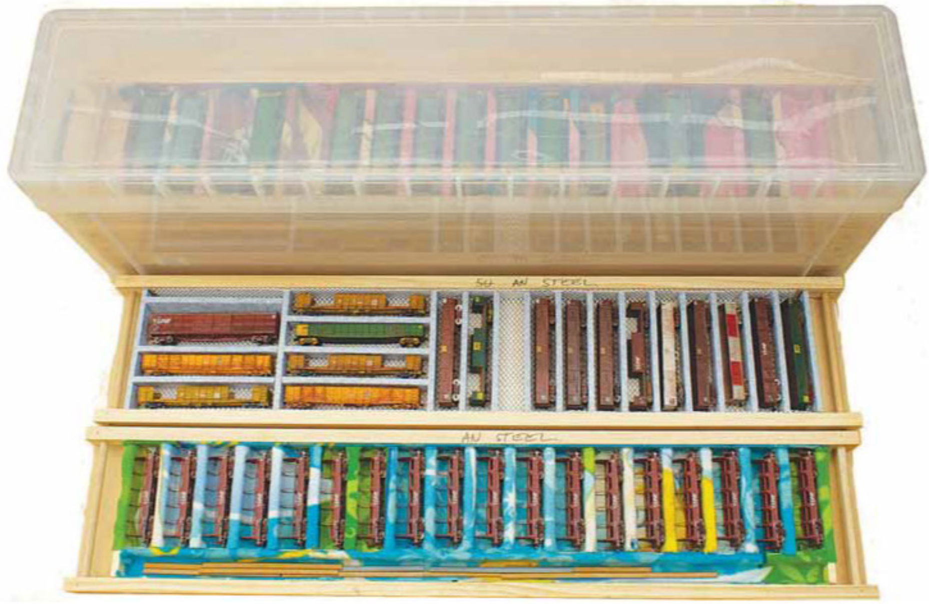
As modellers we tend to go overboard with tooling, and everyone decides to bring their own toolboxes. All this does is confuse the situation and tooling can be misplaced or put into the wrong persons toolbox.

It's recommended to bring only one toolbox with just the essential tools:

- Side cutters, needle nose pliers, track cutters and soldering iron.
- Utility knife, with spare blades.
- A selection of instrument and standard screw drivers.
- G clamps and a small hammer.
- A good reliable Multimeter and a tape measure (a tape measure means you can check you have the right amount of space before you set up).

Consumables

- Red and black dropper wire (it does not need to be a whole roll just enough to get you out of trouble).
- A run of terminal blocks.
- Spare track and joiners (again, it doesn't need to be long sections of track, just various short sections that can fit in the toolbox).
- Spare batteries for wireless DCC controllers.
- Super glue, touch up paint and a small brush.
- Solder.



Two shelves contain all the wagons of an Australian National steel train. Seven shelves can be housed in one Christmas tree box.

Fly away kits

Segregate everything you need for an exhibition: tooling, extension cords, power boards etc, and ensure that these are only used for exhibitions. This makes the process set and forget, You don't need to remember if you have brought this or that, it's always in the one place and always ready to go.

If you really think it's needed, print out and laminate an inventory list on the size of the box (large font) so an unfamiliar crew member can scan what is in which box.

Rolling stock

For Murray River Bridge, three Christmas tree boxes store the removable bridge sections and all the rolling stock. A maximum of seven rolling stock shelves can be accommodated in one Christmas tree box.

Each train has been pre-arranged as a consist; two or more shelves contain the rolling stock for a particular train. Each shelf has a clearly written designation for each train. For example, we have an Australian National steel train. The shelves have a soft segregated location for each wagon (no wagons are touching another wagon in each shelf), each wagon is laid on its side, stopping any side-to-side movement. Where required, the location is customised for that wagon type.

This means a 'significant other' can easily and quickly load and unload a train without any detailed instructions. All you need to do is provide the shelves and ask them *"can you please set up the AN Steel train on the fiddle yard road No.7, and here are the shelves – go for it!"*

If the trains and shelves are set up this way, there is no need for special instructions. It's all too easy!

Refrain from using untested rolling stock, or visitors' rolling stock. If it's untested it can cause reliability issues and the same goes for visitors' rolling stock. It might be a kind gesture but, if it requires constant monitoring or worse, damage occurrs a to visitor rolling stock due to reliability issues it will be awkward to explain to the owner.

Locomotives and operations

Locomotives for each train are pre-consisted. Under each locomotive are easy to read stick on numbers which states allocated address.

Usually, we just plonk the locomotives on the track in the fiddle yard, dial up the lead locomotive and notice which ones move, re arrange them in the consist and dial up the next locomotive and so on until all the locomotives are correctly arranged onto each train.

For exhibition operations an A4 sheet sized plastic display panel notates the road number in the fiddle yard, the lead locomotive address and the consist address. This is written directly on the clear plastic with a water-based Texta pen (whiteboard marker), so that they can easily be amended if a train moves into a different fiddle yard road by mistake or a new consist is made up.

Refrain from re-programming or creating consists at an exhibition. You might create a consist that has the same number as another consist that has already been programmed. Or as a good mitigation, you could program each locomotive in the intended consist the same number. Therefore the locomotives are not consisted, but behave as if they are.

Refrain from repairing locomotives or rolling stock at an exhibition. If there is a problem locomotive or wagon, just pack it away with a paper note of what the issue is and repair it after the exhibition. Accomplishing repairs at exhibitions increases the risk of misplacing screws or small details, and you lose operational capacity while you are accomplishing repairs.

Using an experienced crew, everything will go like clockwork as everyone knows their job. It's fine to 'break in' new crew members at an exhibition, but you are responsible to monitor new crew members. They might fall into a known trap if you don't fully explain the process or get distracted.

If you are taking a break, ensure that there is a clear handover to a new operator. Note any issues such as: "wagon X came off twice at Y, you will need to keep an eye on it" or "I swapped the train in road five with the train in road six"

If you think it's required, draft up an operational roster and email it to the crew so everyone knows who it doing what.

Boxing things up

Refrain from using lots of small boxes, using only a few medium to large capacity boxes. This will make loading easier as there is less to load and easy to spot. If you feel you need to create a pocket inventory list, and number the boxes, you don't need to go overboard; just make some laminated box numbers and an abbreviated list (easy to read) on the box and lid.

Keeping things logical helps. Keep just tools in the toolbox, only extension cords and power boards etc in an 'electrical' box, ie anything electrical goes in the 'electrical' box. Your crew then won't need to consult the top of the box, they will just instinctively put anything electrical in the box that has electrical stuff in it.

Pre exhibition processes

Ensure that everything is consolidated at the one location prior to the exhibition. This is especially true for interstate exhibitions. If you rely on lots of different people to arrive on the day with things required for exhibition, there is a big risk if one person forgets their equipment. By consolidating all the required equipment at the one location prior to an exhibition, it's a good second check to ensure that everything is accounted for.

Set up and take down

Invest in some heavy-duty dollies and trolley jacks to move the layout and equipment from the trailer to the exhibition hall and vice versa. We use two large dollies, which means that one dolly is always moving a board while the other is heading back to the trailer. This process halves the unloading – loading time.

Summary

While this is not an exhaustive list, we hope some of these suggestions will help you develop techniques that work for you when exhibiting, and hopefully make the whole experience pleasurable for everyone.

easyroll
XCALIBUR SERIES
450KG

An example dolly, rated for 450kg (left) and a collapsible trolley jack (right).

IN THE LOOP

Train Heaven

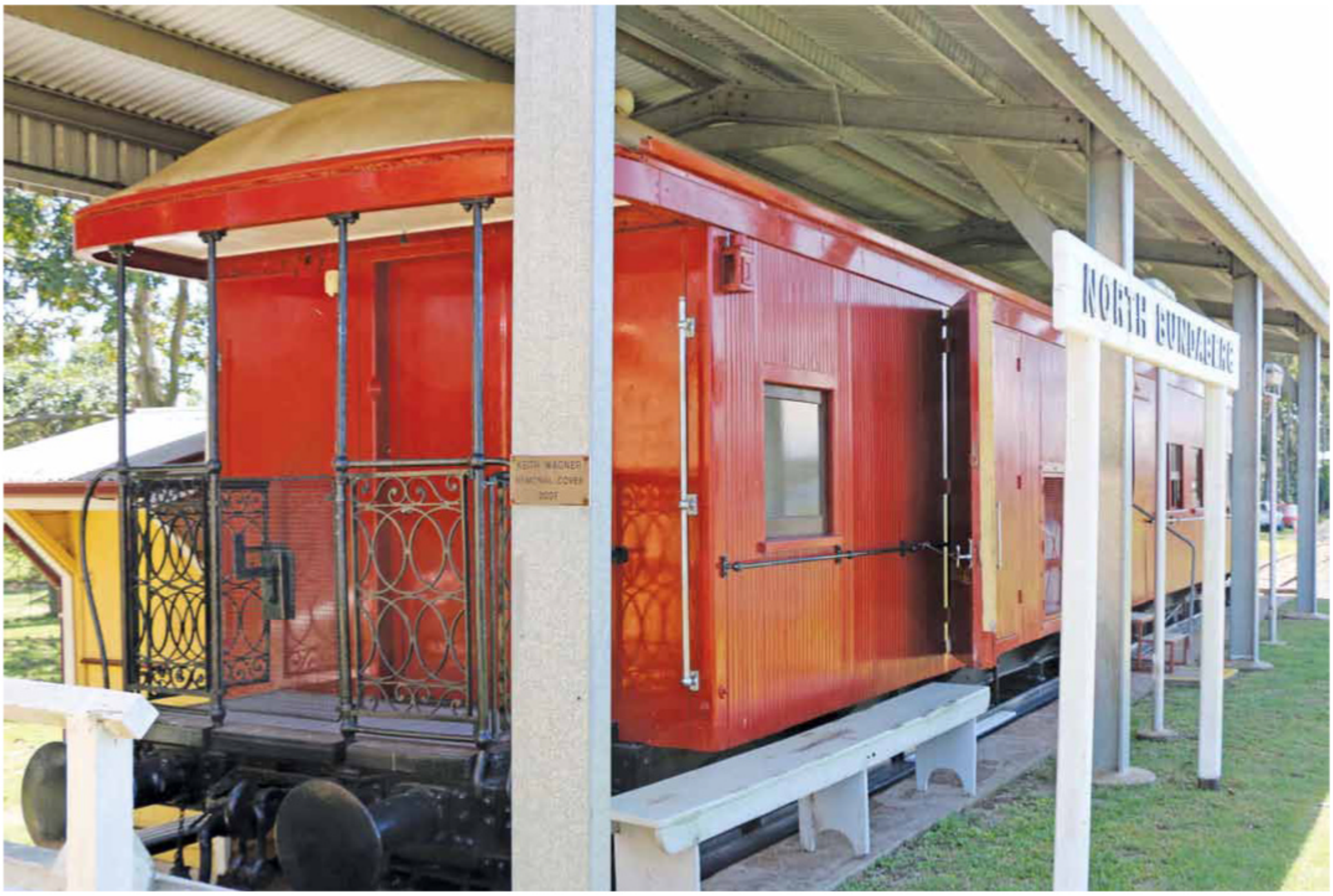
Trevor Hodges

A few years ago, as my partner and I started seriously contemplating moving to Queensland I was talking to a friend who lives on the Sunshine Coast about his decision to model Queensland Railways (QR) in HO. He was born and raised in New South Wales and had been modelling the New South Wales Government Railways (NSWGR) in a couple of different scales for many years. When I told him we were considering a move to Queensland he joked, saying something like: *"Of course you realise if you move up here, you're required to model a Queensland prototype."* Much more recently another friend told me the Queensland border closures during the lockdowns weren't just to check for Covid but that I'd also be searched for NSWGR trains as I crossed the border and that these were bound to be confiscated.

The irony is that I'd been considering dabbling in some QR outline modelling for a number years but nothing had eventuated while I was still living in NSW. This in spite of the fact that I lived twenty minutes drive from the NSW/Qld border and had been attending model railway exhibitions and modelling conventions in South East Queensland for years. I had even presented at the Modelling the Railways of Queensland convention.

What I hadn't imagined before we moved was that I'd end up in train heaven all within a two kilometre radius of our new property. About a kilometre down the road there's a short stretch of QR main line that runs down the middle of the street. Goods and passenger trains regularly pass down this line as they either come off or enter the approaches to the rail bridge that crosses the Burnett River in Bundaberg causing the rail crossing lights to flash and some boom gates to drop blocking traffic for several minutes. If I get caught, I just happily sit in my car and watch the trains rumble past. Some other drivers don't seem to share my enthusiasm for sitting and watching the trains but I'm retired so most of the time I'm not trying to get anywhere in a particular hurry these days.

About five hundred metres down the opposite side of the line from this rail crossing sits the North Bundaberg Rail Museum which consists of the relocated North Bundaberg station building and a small collection of rolling stock and rail related items. I've joined the museum and visited a couple of times and plan to visit again to take more photos and measurements to use in my modelling efforts. When we first moved to Bundaberg, I'd noticed an old style train whistle tooting with-



DAV 933 is one of the items in the North Bundaberg Railway Museum collection and would be a worthy subject for a modelling project.

in earshot of the house on Wednesdays and Sundays but it was Louise who worked out the source of this sound. We live about two kilometers from the Bundaberg Botanic Gardens and while walking our dog there, she'd discovered that there's a loop of track inside the gardens where some restored cane train equipment is run as a tourist railway.

It doesn't take much to start connecting some of these dots; I'd been considering dabbling in some QR modelling for a number of years; I was moving to Queensland; and, after the move I find I'm living in a location overflowing with subjects crying out to be modelled. At this point the sane majority of railway modellers would probably buy some of the excellent HO QR outline r-t-r items that are now available, lay a little track and run some trains. But I live to be contrary.

When I do finally get around to building some QR models I've decided these are going to be in O scale and not HO, S or the common variant of O (1:48) used by most QR modellers. I'm going to stick with 1:43.5, the scale I've been working in for over twenty years. 1:43.5 is the O scale commonly used by NSWGR and UK outline modellers. Why would I do this when it means just about everything will need to be scratch built? While I might have to scratch build the rolling stock everything else I own is in 1:43.5; cars, trucks, building kits, figures, wheels etc. I'm in this hobby to build things so building a loco or two and some rolling stock from scratch doesn't faze me at all and if I do get around to building a layout all the other modelling materials I'll need and have on hand are in 1:43.5. For me, working in any of the other common scales used to model the QR really would be starting from scratch.

You might be thinking: what about track? Track is always a consideration when you start to consider working in new scale or gauge. However, I don't use r-t-r track but rather chose to construct and lay my own for my NSWGR modelling. Why wouldn't I do the same for any QR modelling I might undertake? When you make your own track you can lay it to any gauge or arrangement you choose. I can build and lay my QR track to exactly 3'6" gauge (24.5mm in 1:43.5). All I need are sleepers to the correct dimensions and some track gauges to allow me to ensure the rails are correctly gauged as I lay them. To fill these requirements I ordered a couple of thousand sugar pine sleepers from Kappler in the US (cut to a QR profile at 1:43.5) and I'm currently in the process of making some track roller gauges on my lathe.

I use wheels sourced from the UK company Slaters on all my steam locos and they happen to sell a steam loco axle correctly gauged to 3'6" which evidently was a rail gauge used in Ireland. Once you have a correctly gauged loco axle all you need to do is order the wheels from the Slaters web site to match the prototype you're building. You just pick the number of spokes and the size of the wheel and press a button like any other shopping web site.

The final factor which pushed me toward modelling the QR in 1:43.5 rather than 1:48 is the supply of parts and kits I can source from UK compared to the US, the home of 1:48 modelling. Like all the other state based rail systems in this country QR used the UK as the source and inspiration for just about everything they used on their rail network; not just locomotives and rolling stock but everything from signals to oil lamps.

If I want a part for something I'm building that would be difficult or time consuming to make from scratch chances are I'll be able to get it from one of the large number of UK parts suppliers and these parts will all be in 1:43.5. That can't be said for anything I might want if I was modelling in 1:48 and was looking to source parts from the US.

Do I plan to build a QR outline layout in 1:43.5? At this stage I have no concrete plans to do so but I am in the early stages of building a steam locomotive and possibly a couple of pieces of rolling stock. I've managed to convince a friend of mine to join me in this insanity and I'm actually planning to scratch build two locomotives of the same class, one for him and one for myself and a set of the track roller gauges too.

If you have a locomotive and some rolling stock it's not too much of a stretch to say it's going to need somewhere to run and North Bundaberg station would make a great subject for a model. It was once a huge, sprawling rail yard so I might have to do a little compressing. Anyone familiar with the QR and with North Bundaberg in steam days will be laughing at this understatement. I don't plan to give up modelling the NSWGR any time soon but with so many compelling modelling subjects within a stone's throw of my front door why wouldn't I dabble in QR modelling?

Arduino Accessory Decoders and Servos

Erik Bennett explains Arduino Accessory Decoders and Servos. Photos by the author.

Most modellers have heard of Arduinos, but many don't know much about them or know how they can use them on their layouts.

Many think they are computers, so you need to know how to program them.

Arduinos are not computers. They are little circuit boards with a clever microprocessor and a few dozen connections.

You don't need to program them. Enthusiasts around the world who can, write programs to get Arduinos to do just about everything, and make their programs freely available on the Internet.

All you need is to decide what you want your Arduino to do, then go to the Internet and download a suitable program. You load it into your Arduino and set it up to do what you want.

No programming involved. It's like setting up your TV set the first time. Anyone can do it; you just need to read the instructions.

This article shows you how you can use an Arduino as a DCC accessory decoder to operate Tortoise-type point motors.

Arduinos on your layout

Here are some of the many other things you can use Arduinos for:

- Accessory decoders. One low cost Arduino can act as 16 accessory decoders.
- Using servos as point motors, Arduinos make excellent, simple-to-set-up servo drivers.
- Using them with servos to operate semaphore signals. You can even get the signals to bounce.
- Operate LED signals. You can configure them for multi-LEDs with either common anode or common cathode wiring.

You can connect sensors to initiate any of these operations. Arduino current sensing sensors or infra-red ones that you hide in your ballast cost only a few dollars each.

Anywhere you use momentary switches or push-buttons, you can configure an Arduino so you can use DCC as well as the switches. Handy when you need to change a point and you're on the other side of the layout.

All the above can be achieved at a fraction of the cost of commercial accessory decoders, servo drivers and sensors.

Although we don't cover it here, you can use an Arduino as a complete DCC system, conforming to the NMRA standard. You use an Arduino-compatible power board as the booster and load some software called DCC++ EX. The Arduino contains the intelligence; the power board does the work.

Finally, Arduinos have longevity, unlike some commercial products or suppliers.

About Arduinos

Arduinos were invented in 2005 by a group of Italian university lecturers who wanted something to motivate their students to be creative.

About that time, a chip manufacturer called Atmel introduced the first microprocessor that used flash memory, ie, memory that saves the data when you turn it off.

The university lecturers designed a board to use the Atmel microprocessor and called it Arduino. They named it after the bar they met in after work, which was named after an 11th century Italian king.

The heart of an Arduino is the Atmel chip. In fact, you could say the Arduino is the Atmel chip, as it does all the work. If you look at an Arduino, you see the chip in the middle and a lot of sockets around the outside which connect to the legs of the chip.

There is a bit of other circuitry. The important other circuitry is the 9–16Vdc power supply for the chip, and the USB to serial converter to let you use USB to communicate with the chip.

There are also a few pins for other communication methods and a few power pins.

The Atmel microprocessor runs programs called ‘sketches’. The university lecturers coined the word ‘sketch’ because they taught their students to use pencil and paper to jot down ideas early in their design process. They wanted the creative process to be simple.

You can search the Internet for a site that has the sketch you want and download it to your computer. Usually, these sites give full instructions on what and how to do everything and a loader that transfers the sketch to the Arduino and makes it go.

Plug the Arduino into a USB port on your computer. The USB port provides the power to make the Arduino run. Load the sketch you have downloaded (using the loader that comes with the download), then configure it – in accordance with the instructions for the sketch.

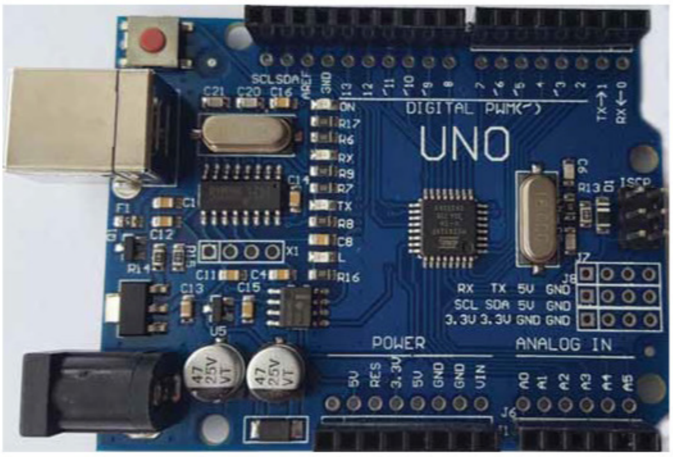
The configuration program then sets the Arduino to run the sketch every time it powers up.

You can now unplug it from your computer and install it on your layout. When you turn on its power, the Arduino runs and does what you want it to do.

You can also download from the Arduino site, a program called the Arduino IDE, which stands for Interactive Development Environment. This runs on your PC and talks to the Arduino via USB. It is another way of transferring sketches to an Arduino. However, we don’t need it in this case.

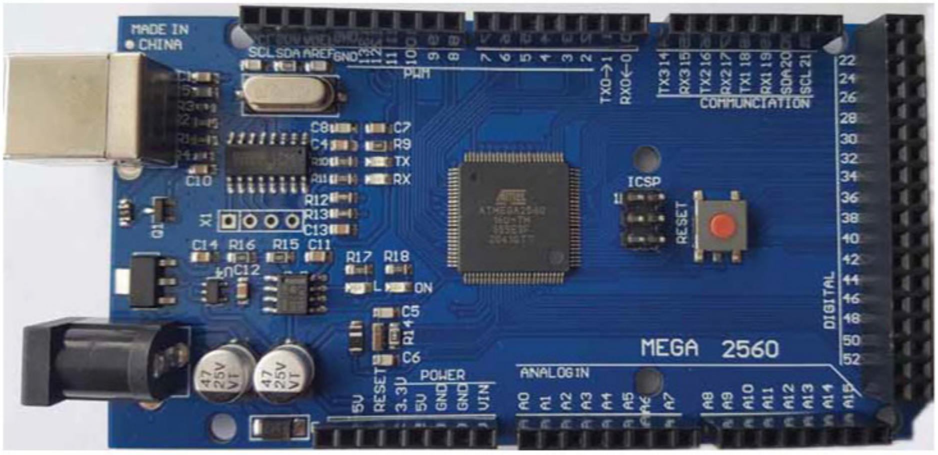
Types of Arduino

Arduinos come in several sizes, the most popular being the Uno. It has 20 Input/Output connectors and sufficient memory to run all the accessory decoder and servo driver software. It ranges in price from Chinese clones at about $6 from the Chinese eBay, AliExpress, to original Unos at about $35 plus delivery from Australian electronics suppliers, RS Components.



◀ *Figure 1.*

▼ *Figure 2.*



For larger projects, such as an Arduino DCC system, more memory is required. The bigger Arduino, the Mega, has more memory and 68 I/O connections. See figure 2.

There are some other types, e.g. the Nano which is smaller, but all use the Atmel chip and have a similar layout with more or fewer Input/Output connections.

Arduino Essentials – Power

The Atmel microprocessor at the heart of an Arduino runs at 5VDC. This is the same as most other microprocessor-driven devices such as your smartphone, inside your computer, inside your TV set, etc.

Your phone charger and computer USB ports output 5VDC, which is suitable for devices with 5VDC microprocessors.

Sim2ilarly, an Arduino can be powered from a USB connection; the same USB connection that downloads and configures its software.

An Arduino also has a standard 2.1mm input socket that allows it to be run from a power pack, such as a wall wart. Any voltage between 9V and 16V will do. The on-board power supply converts the 9-16V to 5V.

When installed on your layout, it’s probably most convenient to run it off a wall wart.

Ports

The Input / Output connections on an Arduino are called ports and most ports can be configured as either Input or Output. Ports are at ‘logic level’, ie. they run at either 5VDC or 0VDC. This suits digital applications, which are either on or off, running or not running, etc. It certainly suits accessory decoders, where you want to switch one way or the other.

If you apply 5VDC to an input port it will interpret it as Switch On; if 0VDC or GND, Switch Off. When the Arduino switches an output port On, it outputs 5VDC; if Off, it outputs 0VDC.

5VDC Relays

The Arduino chip is a low power device, so an output port can only supply limited current – about 40mA max. This is sufficient for LEDs, but not for changing points. So we need use 5VDC relays.

5VDC relays are so named because they run on a logic level input: the relay is turned on and off by its primary receiving 0VDC or 5VDC. An Arduino outputs 0VDC or 5VDC, so they are ideal to be used in conjunction with an Arduino.

They come as a single unit, 4-pack, 6-pack or 8-pack and they aren’t very expensive.

They can do the power switching for just about anything on your layout, as they can switch up to 10Amps.

Each relay has three screw-connector outputs: a common connection, a normally closed (NC) and a normally open (NO) connection. When the relay is not activated, the common output is connected to the normally closed connection; when activated, the common output is connected to the normally open connection. See figure 3.

5VDC relays are activated when the input is 0V, Low, and de-activated when it is 5VDC, High.

Connect a Uno port to the input and whatever you are switching to the output.

When the Uno port outputs 5VDC High, the relay input is High, the relay is not activated and the output is the NC connection. When the Uno outputs 0VDC, Low, the relay input is Low, the relay is energized and the output is the NO connection.

Figure 4 shows the secondary-side power connection for using a Uno and relay to switch a Tortoise type point motor. Port 1 of the Uno is connected to Input 1 of the 4-pack relay. The secondary supplies power as shown.

In Figure 4a, a DCC accessory command has turned Uno port 1 On, so its output is High, 5VDC. The relay input is High, the relay is de-energised, the indicator LED is off, the secondary is in the NC state and +12VDC is supplied to the point motor.

In Figure 4b, a DCC accessory command has turned Uno port 1 off, so its output is Low, 0VDC. The relay input is Low, the relay is energised, the indicator LED is on, the secondary is in the NO state and -12VDC is supplied to the point motor.

In practice, when installing the relay output wiring to the turnout, you test which orientation produces the turnout alignment that you want.

Connectors

The connector system for Arduino equipment uses Dupont wires. Dupont is a manufacturer of plastic products and produces the plastic insulators enclosing the pins or sockets on the ends of the wire. The pins are 0.635 mm square on the end of 28 AWG wire, rated at 1A. The spacing on a row of pins is 2.54 mm. Wires can be male-male (M-M), male-female (M-F), female-female (F-F) and usually come in various lengths in tear-off strips of 40.

Dupont connectors are very convenient for interconnections but are not very robust. The female ends – both on the wires and on Arduinos – have little spring-loaded sockets which are meant to grip the pins when inserted. They can easily be over-extended, so use care when connecting Dupont connectors.

A 40-pack of 15cm wires costs about $6. Also, Dupont pins are available as stand-alone items. You can solder them to Veroboard to make connectors for Dupont wires.

Relay Power Connections

There is an input pin for each relay on the pack and a +5VDC and GND pin for powering the input logic circuitry.

A relay pack can be powered from the 5VDC and GND output pins on the Arduino, but if you are using more than one relay pack, to reduce the power load on the Arduino, it's best to use a separate 5VDC supply for the relays.

You can use a phone charger. You clip off the phone plug and replace it with a 2-section screw connector which you mount near the relay. Use a multimeter to determine which side is positive and colour the screw connectors red and black to indicate the +5VDC and GND (0VDC) terminals, respectively.

Screw the male end of a M-F Dupont wire into the 5VDC side of the screw connector and slip the female end over the +5VDC pin on the relay. Similarly, use a Dupont wire for the GND connection, with the following proviso: a GND is needed to complete the relay power circuit and also to complete the signal circuit from the Arduino. Some relay packs may have only one GND pin. Because Arduinos have several GND pins, it's best to connect the power pack GND to an Arduino GND and connect another Arduino GND to the relay pack, as shown in Figure 6.

Software

The best software package I have found on the Internet is one produced by Nico Teering in The Netherlands called Arcomora, Arduino Controlled Model Railway. He has a number of packages, but the one relevant to accessory decoders and servos is Mardec, Multifunctional Arduino Decoder.

Mardec has a number of important features which make it ultra-easy for first-time Arduino users:

It is complete; you don't need any other software, and it's a fairly small download.

It is extremely well documented in English, with easy-to-read explanations and examples.

It provides every option you need to make an Arduino do what you want for points and signals.

It remembers settings: when you finish a running session, next time you turn it on, all points and servos are set to their previous alignment.

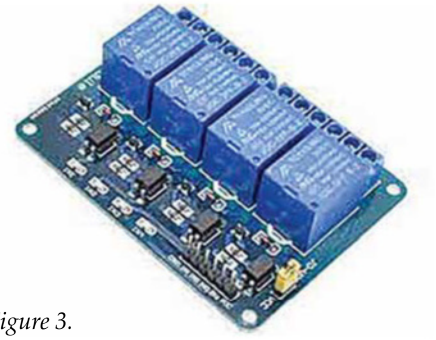


Figure 3.

The Download

You start by downloading the Arcomora Software from the Download section of www.arcomora.com to your PC.

When you install the download, it asks which products to install. You need Mardec; it covers accessory decoders, servos and on-off, red-green, etc, light signals.

If you have sophisticated light signal requirements, you can download Arsigdec as well. Both products are well documented and the documentation is included in the download.

The Mardec download contains:

- The Arduino sketch called Mardec
- A Mardec loader which loads the sketch into a Uno and lets you configure it. Mardec is the name of the sketch and also the name of the shortcut on your PC that organizes the load and passes control to the sketch running on the Arduino.
- A Mega loader to let you load the sketch into a Mega
- A program that lets you change the USB Com port – if you plug the Arduino into a different PC from the one you first used
- the Mardec documentation

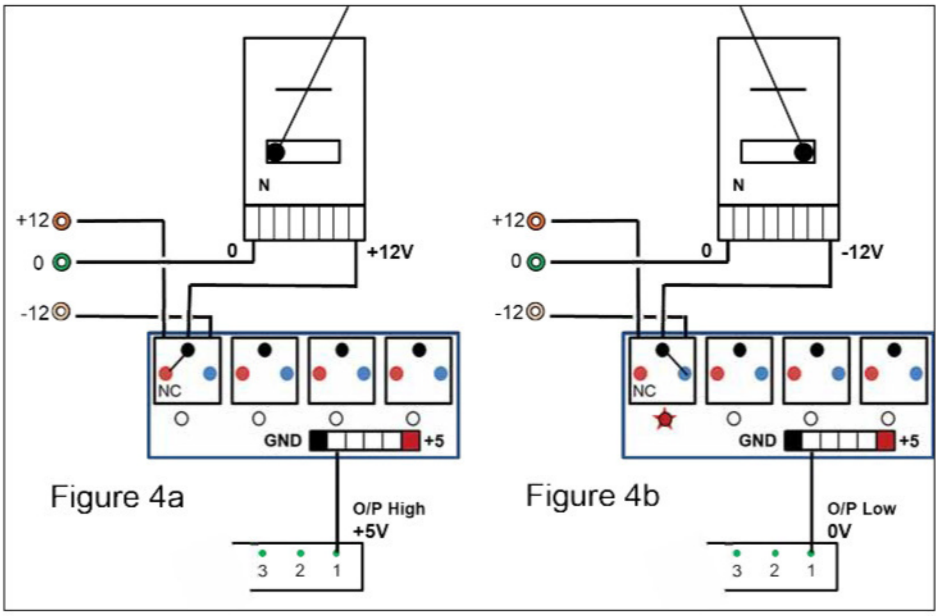


Figure 4.

Setting up the Arduino

These are the steps to set up a Uno to operate a Tortoise-type point motor:

- Read the Mardec manual thoroughly, particularly the section on Accessory functions.
- It's a good idea to make a LED test lead to enable you to experiment with configurations. Use any LED and solder a 1K resistor into either lead. Solder two Dupont plugs if you have them or fold over the end of the leads to form plugs. Plug the positive lead into Uno port No 3 and the negative into any GND socket.
- Plug the Uno into your PC.
- Click on the Mardec shortcut. The first time you do this it will run a process on the PC which will load the USB drivers to enable it to talk to the Uno.
- It then loads the Mardec sketch into the Uno and hands control to Mardec on the Uno. (The unusual-looking screen format is actually the Uno desktop running on your PC.)
- It asks you to number this Uno so, if you have a number of Arduinos, it can tell you which is which.

It asks a few preliminary questions:

- are you using a Roco system (which has a strange DCC address system), and asks for some servo default values.
- It lists the port configuration for all 16 ports. Initially, of course, all ports are un-configured.

Mardec then asks what you want to do.

You say you want to configure ports, so it asks you for the Mardec port number and the DCC address you want to assign to that port. Because of the physical setup of the Uno, Mardec port number 1 is actually Uno port number 3 – which is why you plug your LED test lead into Uno port 3.

Figure 5.

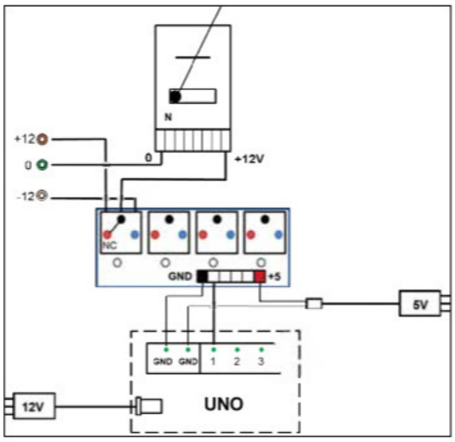


Figure 6.

It asks whether you want this port to be an Accessory, Servo or Input port. We want to operate a point motor, so you say A for Accessory.

Mardec asks what Mode you want. Mardec can get the port to behave in nine ways, which are called modes. These can be constant output, flickering, pulsing, one-time pulse, etc. For points, you want constant output, so you enter Mode 1. The modes are explained in the documentation.

And that's all there is to it!

Mardec asks if you want to test the output. You can, by entering T. Mardec will simulate a DCC accessory command to the address you gave for the port. You can turn the port on and off by tapping T, simulating DCC commands, and you can see it working with the LED.

If you wish, you can experiment and change the mode, e.g., to flashing, and you will see the LED flashing.

When satisfied, you tell Mardec to save the configuration. It will do so and set the Uno running.

You could now install it on your layout, although you might want to configure all the ports you need for multiple point motors.

Once you have done the above for a test and familiarization, you can read the manual a bit more and configure accessory combinations, servos and sensors (using Input ports).

Installation DCC – Arduino Interface

Arduinos run at 5VDC. DCC track voltage is typically 12–14V, so you can't just connect a pair of track droppers to the Arduino. You need to reduce the DCC voltage by building a small interface. The output of the interface plugs in to Arduino pin No 2, which Mardec uses to interpret the DCC signal.

You need a small piece of Veroboard, a few resistors, a ceramic capacitor, a LED and an opto-coupler. The opto-coupler ensures the DCC system and the Arduino are electrically isolated from each other. It needs to be a 6N137, which is a fast switching one to keep up with the DCC signal. Get them from RS Components, part numbers 691-2325 or 805-1267.

Figure 7 shows the circuit and layout superimposed on the Veroboard. The horizontal lines depict the copper tracks on the side you solder the components to; the components themselves go on the insulated side.

Note the cuts in the copper tracks. The dot on the opto-coupler must go in the orientation as shown.

The DCC input feeders go into the screw terminals shown on the left. The two parallel resistors on the input give you about 1.1K and ensure they stay nice and cool even with a high DCC track voltage.

For output to the Arduino, you can solder M-M Dupont wires with one end cut off to the Veroboard or use screw terminals with M-M Dupont wires.

Assembly

You need the normal power source for the Tortoise-type point motors, usually plus and minus 12VDC. You need a 9–16VDC power pack for the Arduino and a 5VDC supply for the 5VDC relay. The 5VDC phone charger, described earlier, will do, with suitable connectors for +5VDC and GND.

Figure 6 shows the full wiring. Note that the relay needs a ground from the 5VDC supply to complete the power circuit and also from the Arduino to complete the signal circuit. If the relay pack you are using has only one GND socket, connect the relay power pack GND to the Arduino and another Arduino GND to the relay pack.

Conclusion

This document covers the elements of Arduino hardware and the 5VDC relays that enable you to operate or switch most equipment on your layout.

We've covered just one of the accessory decoder options of the Mardec program, the constant output to operate a Tortoise-type point motor.

Some further reading of the Mardec manual will reveal how to use it for many other DCC requirements, such as servo operation, pulses to emulate push-buttons, blinking lights, sensor input, etc.

If you use servos, Mardec provides easy set-up for positioning, rotation speed, end point adjustment, bounce, etc.

So, like me, if you need accessory decoders and servo drivers, get into Arduino and Mardec.

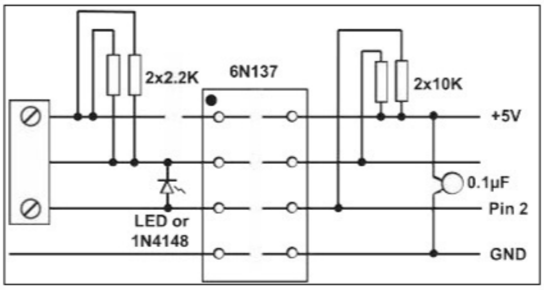


Figure 7.

Putting the O in Casterton – Part three

Scott Whitaker continues construction of his epic O scale layout. Photos by the author

Planning for the scenery

Once the track plan was finalised, my attention was drawn to the scenic aspects that would depict the Western District of Victoria. The topography is undulating, unlike the Mallee further north, that has large tracts of land cleared for grazing. Several large rivers and many smaller waterways traverse the district, with the waters ultimately flowing into the Southern Ocean near the South Australian border. I've spent several weeks observing and photographing the district at different times of the year. To my eyes, the landscape looks the most attractive in spring, when the paddocks are verdant with lush grass, and this is the period (September 1969) that will be modelled.

One of the early decisions I made was to keep the track level across the entire layout, mainly to reduce operational problems, eliminate vertical transitions, and reduce the risk of grades not aligning properly on adjoining modules, especially on curves. The next decision was that the railway had to realistically traverse the landscape, rather than the scenery constructed to fit around the railway. The third was that I would use the Hollywood approach for building sets – meaning that any scenery or structure would only receive basic detailing, if at all, on the side that was invisible to the viewing public.

On my previous layout, I tried several different methods of constructing scenery. After experimenting with chicken wire, cardboard, and plywood, I settled on the use of extruded polystyrene foam sheets (XPS). These panels come in various thicknesses and colour and are easy to handle, relatively economical, and are a breeze to carve to the desired landform. To economise, for the times when I need to build a large hill, I'll either use some free (low density) polystyrene fruit boxes (from the supermarket) cut to size or build up a framework from timber. Whatever method, I always top the rise with XPS to allow it to be carved to shape. Although the low-density foam cuts well with a hot wire, it tends to crumble when carved.

Before I make a start on each module, I plan how the track and scenery will interact. The depth and heights of cuttings and embankments are derived from the original contract documents, cross-referenced with photographs and old newspaper articles. The deepest cutting on the line is near Casterton, and the highest point the rail is above the natural surface is the crossing of the Glenelg and Wannon rivers, about 40 feet (12m), or around 250mm in 1:48 O scale. As the track is at a standard height of 1200mm above the floor, planning must also account for module framework that will be mounted lower or higher than normal. I do this in 50mm increments, which matches nicely with the 50mm thick foam sheets.

Building the modules

Once all the planning is complete and a contour sketch prepared, construction begins. The modules are generally constructed to a size of 1200mm by 1800mm, with some variations in size to accommodate the scenery. A rectangular frame of 19 x 64mm dressed pine is constructed with cross-members inserted at 600mm intervals.

The use of 600 as a standard is based on economics, as most materials used in construction are based on that number: for example, timber comes in 1.8, 2.4, 3.0m etc lengths and the foam board I use is 600mm wide. To provide for a sturdier base for the foam, a 19 x 42mm section of pine is added, flush with the top of the module, to form a mini 'L' girder. Once complete, the first 50mm layer of foam is glued to the base with all-purpose polyurethane adhesive. To apply, a bead of adhesive is added to the timber frame and spread smooth with a piece of scrap.

Be careful here, as the glue will stick to everything, and it can get rather messy. Don't buy too much of it at once though, as it tends to go off in the bottle within a few months of opening.

The foam is then misted with a light spray of water (from a spray bottle) to activate the adhesive. The two elements are then clamped or weighted for several hours.

A sheet of 30mm foam is then temporarily attached to the 50mm board below it with large T pins. The centreline of the track is then marked out, and the permanent way constructed. After triple checking the alignment of the track with adjoining modules, the completed track is glued to the foam beneath and then 'masked' with tape to prevent any damage during the application of the scenery.

A cardboard template of the terrain is then attached to the sides of the module and the foam built up or removed to approximate the necessary elevation. The templates are then removed and saved for use on adjoining modules. I use a variety of tools to carve the foam to shape: hot wire cutters, surform planes, knives and a very stiff wire brush used to clean up welds. But the process creates a huge amount of, in my case, green 'snow', which goes everywhere. To try and keep it under some sort of control, I regularly run my shop vacuum near the work area and clean up. It is important to distress all the foam to allow the next layer of scenic treatment to adhere.

WARNING
As always, wear appropriate personal protective gear.

Once the landform has its desired shape, all remaining granules of foam must be removed. I find the easiest way is to tip the module on its side and secure it with clamps. I use an old paint brush (the thicker and harder the better) to remove stubborn grains while vacuuming them up at the same time. Any gaps in the foam, or errors in carving, are dealt with by using scrap pieces of foam or scrunched up newspaper covered with 150 x 150mm squares of 'Chux' type cleaning cloth soaked in PVA diluted 1 to 4 with water.

Applying the scenery

After chatting with fellow modellers and watching numerous YouTube videos, I ended up adopting many of the methods used by the talented Australian modeller, Luke Towan. Luke's online tutorials at www.bouldercreekrailroad.com provide a wealth of information, and his results are very impressive.

Bitumen roads are then marked out and strips of 6mm thick cork cut to size. I lightly score the centre of the cork strip and then glue a 2mm thick piece of stripwood to the underside centre, which forms the camber of the road. The road is then glued to the foam with polyurethane adhesive, secured with T-pins along the edges. Once cured, surface gaps are filled and sanded, and the road masked off. Driveways, farm gates and intersections with gravel roads are marked for future reference.

The next step in the process is to apply a layer of Sculpt-it, a paper-mache/plaster mix that I buy in 10kg boxes from educational art suppliers.

Mix according to the instructions to achieve a 'cottage cream' consistency. I have a small bucket to which I add about a takeaway food container full of Sculpt-it, which covers around half a square metre. This stuff goes off quickly, so work fast.

Using a plastic paint scraper, apply a coat 3 to 5mm thick. Within a few minutes it will start to cure and harden. Using my hands soaked in water, I then start to smooth out the Sculpt-it. This process will be repeated several times until the required finish is obtained.

Once it's been on for about half an hour, that's the final shape; although you can fix it by sanding once it is fully cured. The curing time depends upon the weather. When I used it in Victoria in winter, it took over a week to fully set. However, in the tropics you're good to go after a day or so.

Next, the Sculpt-it is painted with a very flat house paint, tinted with your preferred earthy colour. The dirt around Casterton is a sort of tan/brown colour so I use a paint tint that approximates that. Conversely, if you were modelling Victorian high-country forest soils, you would use a red/brown colour. Use the cheapest paint you can find – and occasionally you can nab a bargain in the 'mistints' box at your local paint store.

Before the paint fully dries, I grab a squeeze bottle of PVA (cheapest no-name you can find) and liberally mix it into the paint. A dirt mix comprised of 50% finely sieved real dirt and 50% tile grout (I use Davco Truffle No.72) is broadcast over the paint/PVA mix, shaken from a container equipped with a piece of pantyhose secured with a rubber band.

For vertical surfaces, the dirt is blown off a piece of cardboard with a straw. A light misting of Isopropyl alcohol over the entire area binds everything together and ensures an even colour as the surface dries out.

The position of farm and railway fence posts are then marked out. My fences are a simple standard design of 4-inch square scale stripwood posts notched with a craft knife (using a jig) to accept five strands of wire (Berkshire Junction EZ-wire – I use the HO product as the O scale product is too course). The posts are placed about 25 scale feet apart, and once the scenery is finished, strung with the EZ-wire. I attach the bottom wire first with a dab of superglue – preferably on the rear side of the post. Keeping the line taut, I string from post to post, securing each with superglue applied from the tip of a pin, and quickly cured with a spray accelerator. Zip Kicker by Zap is effective for this task. Droppers (1 x 2-inch scale stripwood) are then added at five scale feet intervals. Allowances are made for gates – usually scratch-built and soldered up from brass wire of various thicknesses.

My railway fences are between 150 and 250mm from the track centreline (depending upon the terrain). This is another compromise to reality, as the railway reserve would be around 900mm wide if modelled true-to-scale.

Gravel roads, bare patches and the position of trees are then marked out preparatory for the application of the static grass.

I have two 'blends' of static grass that I used on the layout – one that contains fibres up to 12mm in length for the railway reserve and along the roadside, and a shorter blend for use in paddocks and parks and gardens.

I mix up the fibres and store them in a large container. My 'paddock' blend, for instance, contains 3, 4 and 7mm Woodland Scenics light green, 3mm wild honey, 3mm harvest gold and 5mm Dry farmland by Ground Up.

Working in a small section at a time, the area to be covered is liberally coated with PVA, and the 'grass' applied with a Noch Grasmaster. To seamlessly join the two patches, I leave a small gap in the PVA between them and use a spray adhesive (Selley's Kwik Grip spray) to bridge the gap. Alternatively, leave the gap to simulate a cow or sheep path through the paddock.

Once dry, I cut the toe section from a pair of panty hose to a length of about 150mm. I then push the toe section into the hose of the vacuum cleaner and secure with an elastic band. I then suck up and recycle the fibres, which saves me a lot of expense – thanks for another great tip, Mr Towan!

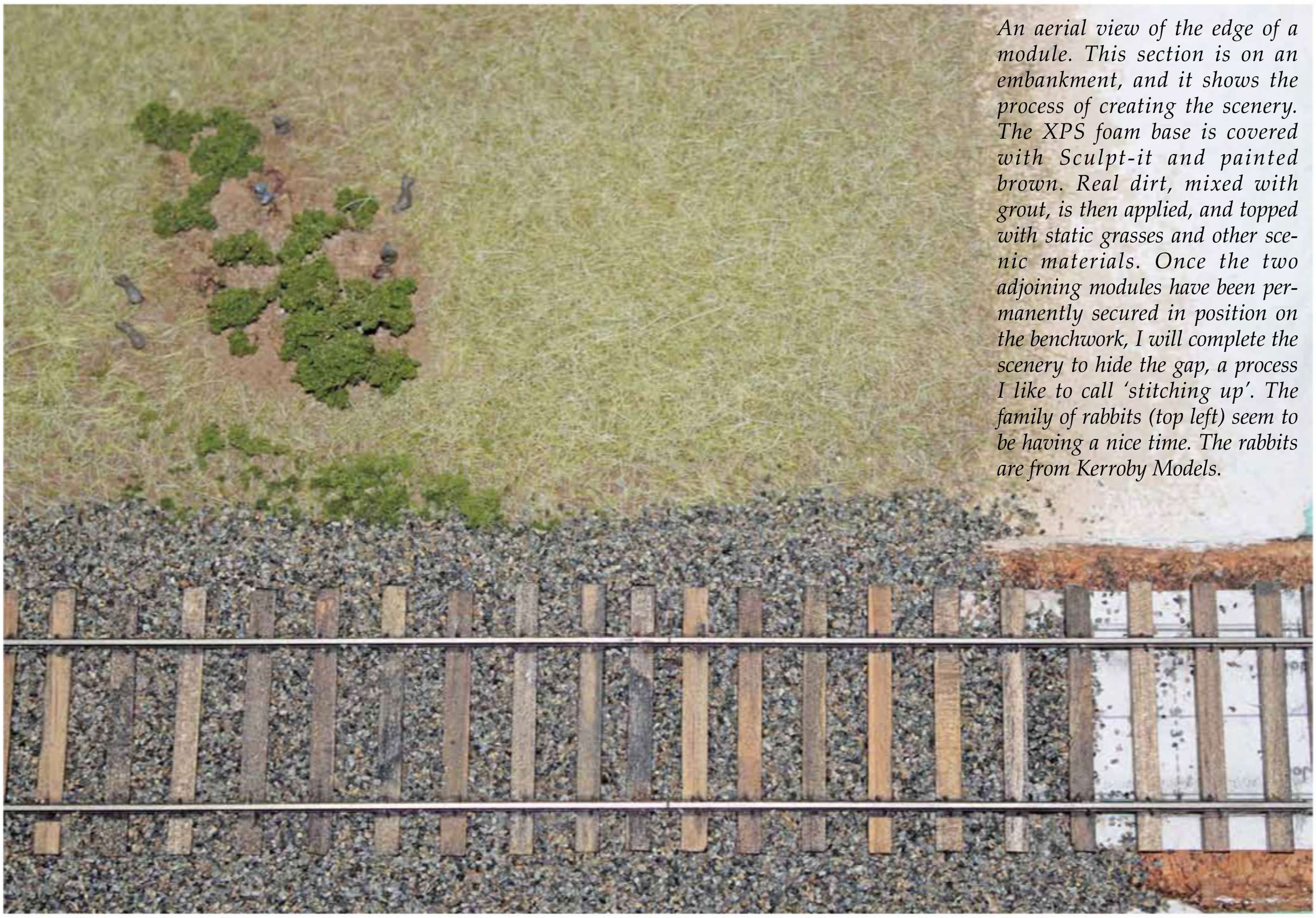
Various shades of ground foam and other scenic products such as ground up real leaves and twigs are then added – mainly around the tree sites and the trees planted into position and secured with matt Modge Podge.

Sheep and cattle (3d printed), and the occasional farmer on a horse or tractor bring the scene to life.

Waterways

For rivers, creeks, dams, and ponds, I use a different technique. Firstly, the Sculpt-it at the base of the model waterway is sealed with several liberal applications of Flex Paste by Woodland Scenics, allowing several hours between each coat.

Once fully cured, the watercourse is then painted with various shades of



An aerial view of the edge of a module. This section is on an embankment, and it shows the process of creating the scenery. The XPS foam base is covered with Sculpt-it and painted brown. Real dirt, mixed with grout, is then applied, and topped with static grasses and other scenic materials. Once the two adjoining modules have been permanently secured in position on the benchwork, I will complete the scenery to hide the gap, a process I like to call 'stitching up'. The family of rabbits (top left) seem to be having a nice time. The rabbits are from Kerroby Models.

brown, from light along the edges to darker in the middle, to suggest depth. Various real rocks – you can find some good ones in a real river, if nearby, or for a few dollars at your local plant nursery – are glued into position. Sandbars are built up with real river sand and logs added (represented by twigs). If you are modelling an urban area, all sorts of junk can be put in, the odd shopping trolley or car tyre, or even the whole car.

Vertical rock faces are cast in plaster, and coloured with various brown, yellow, and black washes. Dry brushing with white paint brings out the detail. For rivers, trees are planted along the riverbank – complete with the obligatory Tarzan swing, and tree roots protruding into the river. None of the rivers or dams in the southwest of Victoria have clear water – it's all murky and brown.

To represent the water, I use a two-part epoxy: Deep Pour Water (murky) by Woodland Scenics. The instructions have a handy calculator to help you approximate how much to mix up. And make sure you mix for the full 10 minutes required. But before mixing and pouring, the waterway must be fully prepared. Make sure the area is dead level as any epoxy type 'water' will self-level as it's poured. For creeks and rivers, a dam must be constructed so all that expensive epoxy does not end up draining onto the floor. I use a thick piece of styrene sheet 'glued' to the edge of the module with silicone sealant.

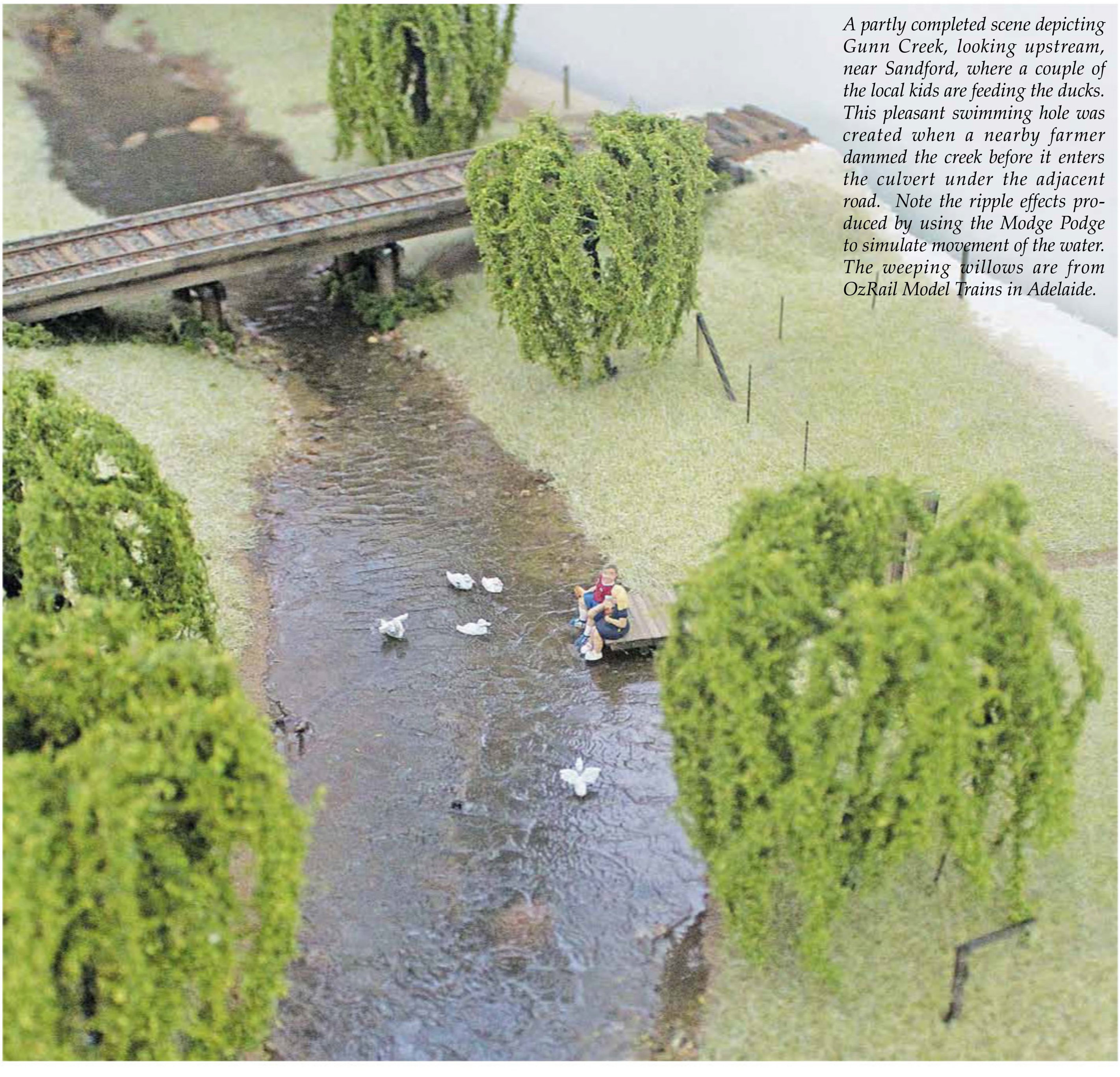
Pour to depth according to the directions and place a cover over the area while it cures to ensure that dust does not settle on the sticky surface. When it is nearly dry but still tacky, ducks or swimmers, or boats, can be added to the surface. Most of my rivers require a second application to get the necessary depth and when fully dry, ripples can be simulated by dabbing on neat gloss Modge Podge and teasing it about with an airbrush. Although it goes on white, the Modge Podge will dry fully clear within a few days.

Roads

I've taken photographs of all the gravel roads that I will be modelling on the layout. Depending upon the region, and the quarry used to source the gravel, the colour varies enormously from a dirty white/cream to brown/red to the more traditional blue/grey crushed road-base.

To achieve the desired result, I 'colour' the dirt previously applied with a selection of Pan Pastel colours. For farm tracks, I add a strip of vegetation (static grass) along the centre and accent the wheel tracks with the Pan Pastels. To blend everything in, I use various weathering powders, all secured with a quick mist of matt Modge Podge diluted 1 to 4 with water and a drop of dishwashing liquid, followed by a mist of isopropyl alcohol.

Once the messy part of the scenery is



A partly completed scene depicting Gunn Creek, looking upstream, near Sandford, where a couple of the local kids are feeding the ducks. This pleasant swimming hole was created when a nearby farmer dammed the creek before it enters the culvert under the adjacent road. Note the ripple effects produced by using the Modge Podge to simulate movement of the water. The weeping willows are from OzRail Model Trains in Adelaide.

done, I unmask the track and the bitumen roads. I use a textured 'bitumen' paint product from Vallejo which nicely simulates the chip-seal surface of rural roads.

As the final colour is too black for my liking, I paint the surface with various shades of grey primer. Patches, potholes, and rough edges, followed by line marking using a white paint pen complete the job.

To model black asphalt, I use sheets of 2mm thick Ethylene-vinyl acetate (EVA) foam sourced from Lumins Workshop (www.luminsworkshop.com) and cut to shape. This product is available in various shades of black and grey and looks realistic. It's great for level crossings, carparks, and station platform surfaces.

Additional details, such as gravel spread over the surface where a gravel road meets the hard top, road signs and guideposts are then installed.

To make my signs, I have a look at the various road traffic authority and road sign manufacturer's websites. I then copy the images and scale to the right size and print them with a colour laser printer onto clear decal film, sourced from Amazon. I apply the sign decals to a section of 0.4mm white styrene sheet that has been spray painted silver/grey on the rear side. As my printer does not print white, it leaves that section of the print clear. Once the decal has been applied to the styrene, the white sections are revealed.

A post is made up from 1.5mm styrene rod and the paint touched up as necessary. I've found that the styrene works well for signposts, as it is flexible enough to withstand being bumped. Brass wire tends to bend and is hard to fully straighten out once the damage has been done. As my layout is set in 1969, and metrification of Australian road rules did not occur until 1974, all the signs are in imperial measurements. Back then, signs such as 'give way', were the reverse of today's sign, being almost all red like a 'stop' sign, rather than just having the red border.

Warning signs used words rather than images – such as 'Kangaroos' rather than a picture of Skippy. Examples can be found online at www.hobbiesplus.com.au/signspotters.

The track is given a final weathering using pan pastels and various chalk powders, along with the odd weed, discarded sleeper and tree branch. As a final touch, the fishplates previously attached to the rail, are lightly dry brushed with white paint to bring out the detail.

Cars and trucks

Unfortunately, there are not many ready to run or kit Australian vehicles produced in 1:48 O scale. However, a huge range of diecast and resin vehicles are produced by several manufacturers, such as Trax (www.topgear.com.au), to 1:43 scale. Although slightly oversize, they look great and can be disassembled to allow figures to be placed on the seats, and head and tail lighting to be installed. Being country vehicles, they tend to be a bit dirty, so weather well!

I use optic fibres lit by red and white Light Emitting Diodes (LED) to make the lights. After drilling a small hole in the head/taillight assembly, a bulb is fashioned by gently heating the plastic fibre and pushing it down firmly on a piece of brass sheet. The fibres are then threaded through the car and secured with a couple of dabs of PVA (to make it easy to replace if it ever needs to be). A LED is then placed at the end of the fibre, and the whole covered with heat shrink tubing. I then adjust the voltage to get the effect I'm looking for and secured the vehicle to the road with a temporary adhesive, such as Hob-e-tac by Woodland Scenics.

Underneath the layout, the assembly is terminated with a plug (again for easy removal if needed) and connected to the accessory bus. Accessory decoders or Arduino modules will be used to turn the vehicle lights on at different times, as the layout goes into night mode, just like the real thing.

Figures

Apart from a few traditionally cast figures (both human and animal) collected over many years, most figures sourced to date are 3D prints from Andian Models (www.andianmodels.com) in Coffs Harbour and Modelu (www.modelu3d.co.uk) in the United Kingdom. These figures are then custom painted by Ian Fainges (www.deviantart.com/fanai59) in Brisbane. The level of detail is amazing: watches on wrists, realistic facial hair, and creased clothing. But they are expensive.

To reduce costs, I've recently purchased my own 3D printer and scanner, and have started scanning my family and friends for use on the layout. In one scene envisioned, my mate Jim is busily washing his prized vehicle, a 1950 Ford Custom Single Spinner sedan – a car he had when he was much younger. As the vehicle is 1:43, I'll scale Jim to that proportion rather than 1:48. And yes, there will be a scan of me as a train driver!

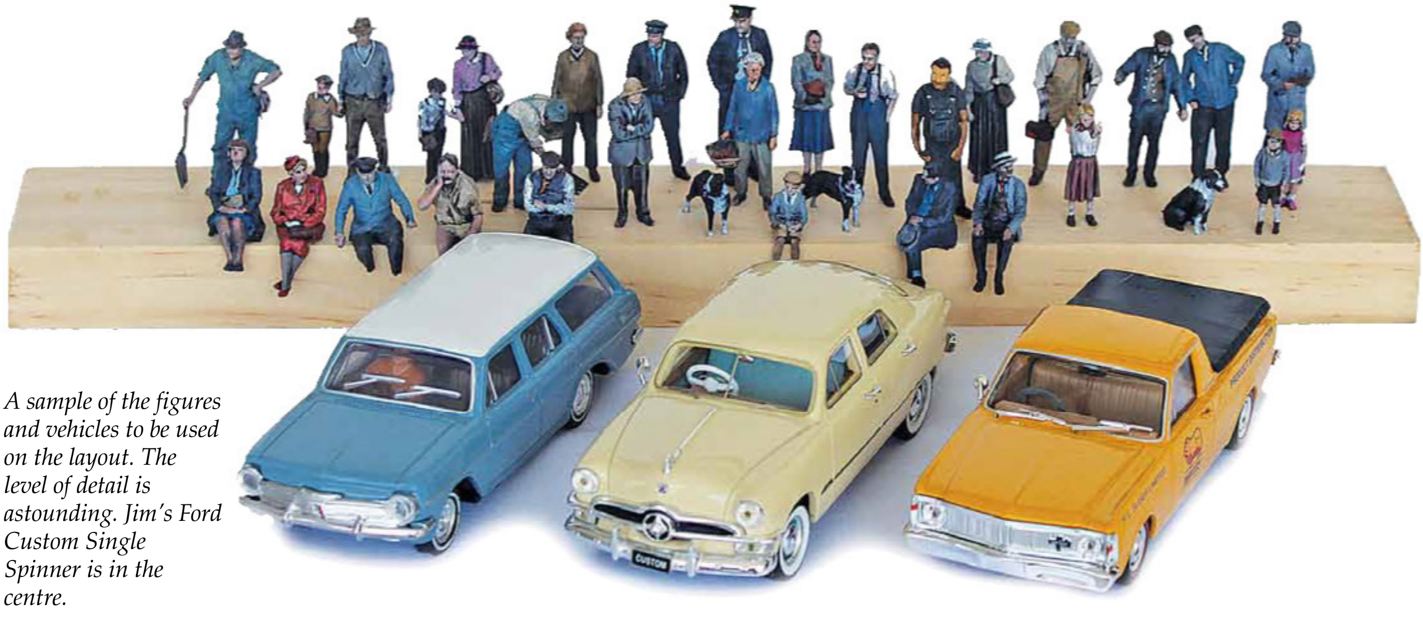
The 3D printing technology is advancing rapidly, with colour printing now possible. Beautiful and realistic skin tones and details such as checked shirts are now available.

Structures

Along with most of the rolling stock required, the structures for the layout must be constructed from kits or scratch built. Fortunately, Walker Models (www.walkermodels.com) produces some very nice Australian outbuildings and stations in O scale. And fortuitously, the range features a kit representing the Bullarto station building, which is the very same building that was erected at Henty, Merino, and Sandford stations.

Although none of these station buildings survive, several photographs and book references confirm the style used.

The original station building at



A sample of the figures and vehicles to be used on the layout. The level of detail is astounding. Jim's Ford Custom Single Spinner is in the centre.

Sandford was relocated to Goroke (about 120km north on the Carpolac branch) in 1955 and replaced with a modest portable station building.

The rest of the station buildings at Casterton, Branxholme, and Hamilton, along with good sheds, stock races and engine sheds will all have to be scratch built. The task is made somewhat easier as Veteran Models (www.veteranmodels.com) produce etched brass turntable bridge kits in both 53ft (16.2m) and 70ft (20.4m) lengths, along with various detail parts. The turntable mechanisms have been sourced from Anton's Trains, now available through Scale Model Co Hobby Store (www.scalemodelco.com.au) in Sydney. The 53 ft turntables (capable of turning a J or K class steam locomotive, without separating the tender) are to be located at Casterton and Branxholme, whilst the larger 70-footer will be situated within the loco depot at Coleraine Junction.

There will be several Departmental Residences (DRs as they were known) built and clustered around the various stations also. Although a little overscale for my layout, I've built up several 7mm O scale Australian kits produced by Model O Kits also. To compensate, I place them away from a 1:48 scale structure, and populate them with 7mm scale people and vehicles. In addition, I have 'Australianised' several North American structure kits.

Scratch-building

It was the various site visits that allowed me to gather information on existing and former buildings by photographing what survives and visiting numerous historical societies and museums.

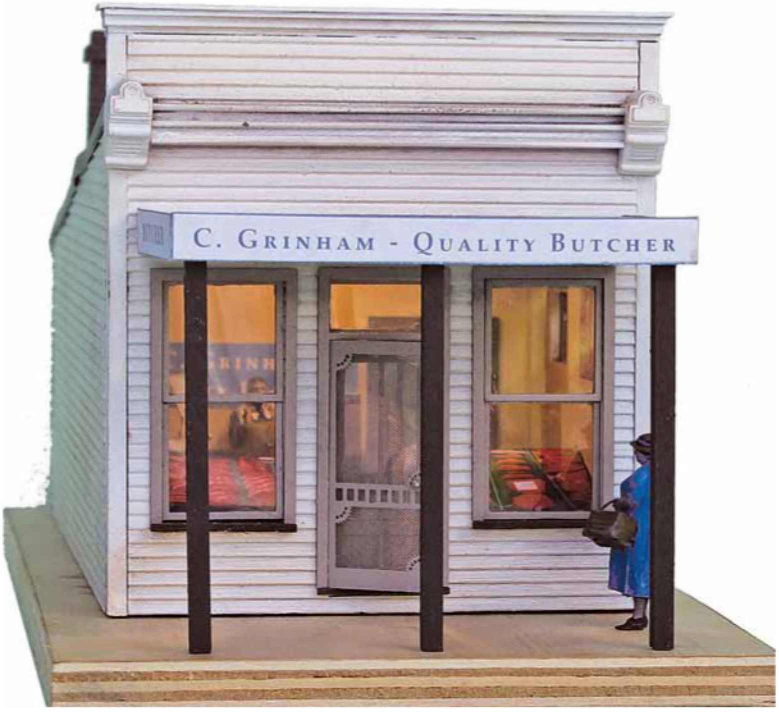
In addition to the streetscapes of each town, various farm buildings such as homesteads, outbuildings, barns and sheds, stock yards and shearing sheds will be required. I'm also keen to model some abandoned structures as well as a couple of burnt-out houses – essentially a pile of rubble and a free-standing brick chimney.

Then there is all the detailing, such as garden beds, garages, clotheslines that are found in backyards to be considered. Another consideration is that the area modelled can be very windy at times, and structures such as unbraced haysheds, telegraph poles and fences, can develop a significant lean over time. The challenge is to represent this feature realistically, rather than offering a perception of poor modelling.

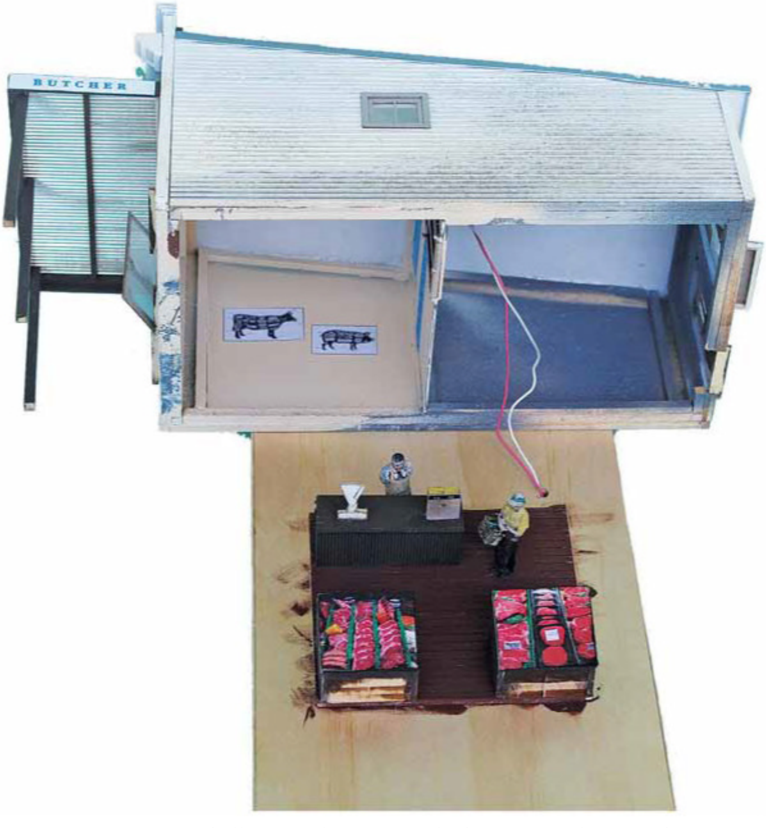
Once I've sketched out a design, I use a variety of media for the actual build such as plastic door and window castings, wood clapboard siding (to represent weatherboard), brick sheets and scale corrugated iron (aluminium). I have a large range of dimensional timber on hand which I use for finishing touches such as facia boards. I paint as many of the individual components as I can before final assembly, bearing in mind that materials such as the clapboard siding will warp during the painting process if left unbraced. I either build up a frame of stripwood or alternatively laminate the timber siding to a 2mm thick section of styrene sheet.

For my structures, I've settled on a standard design for the footing. Whatever the style, be it timber piles, a concrete slab or brick edged, the foundation is secured to the layout, along with any interior detailing. The completed superstructure is simply pushed onto the footing for a snug fit. Friction keeps the building in place and makes it very easy for maintenance. Interior lighting (LED) is attached to the ceiling and the wires hidden. As with the vehicle lights, the wiring terminates with a plug which connects into the accessory bus. I make sure there are no light leaks, and that the lighting is not too bright or dim. Any light leakages that do occur are dealt with a blob of Blu tack.

In the next part, I will talk about the track plan, electrics and benchwork. Until then, enjoy the ride.



Mr Grinham was one of Sandford's two butchers, and his store has since been demolished. The Grinham family, also spelt Greenham, became pioneers of the Sandford district after patriarch George Greenham came to Australia in 1855. Apparently, the variation in spelling of family names was somewhat common in the early years presumably due to high levels of illiteracy. This structure is a heavily modified and Australianised Interaction Hobbies kit. (www.interactionhobbies.com/O-Scale-Kit-Keegers-Garage-Repair_p_126.html). All structures will have interior detailing and lighting. I've distressed the exterior to depict the store in a relatively run-down and dirty condition with peeling paint and cracks in the timberwork. Once the store is ready to place on the layout, I'll 'pave' the 9mm plywood with thin styrene painted to represent concrete and add a step at the threshold.



The superstructure of all my buildings snugly fit onto the footing of the structure that will be attached to the baseboard structure, thus allowing the area to be landscaped and the structure easily removed to alter the interior or for maintenance. All lighting is LED based, chosen for longevity. The interior of the storeroom at the back of the store has been left empty, as it is impossible to see inside from the front of the layout.

A LOCATION TO MODEL

Oberon NSW

John Casey provides an opportunity to model a steam or diesel layout in a small space.

The Oberon railway line was a short branch line in central western New South Wales. The line branched from the Main Western Line at Tarana and headed in a southerly direction to Oberon. It was proposed as a line from Tarana to Burraga to benefit the Burraga copper mine. The line opened to Oberon on 3 October 1923 and was lightly constructed with steep grades (1 in 25) and tight curves.

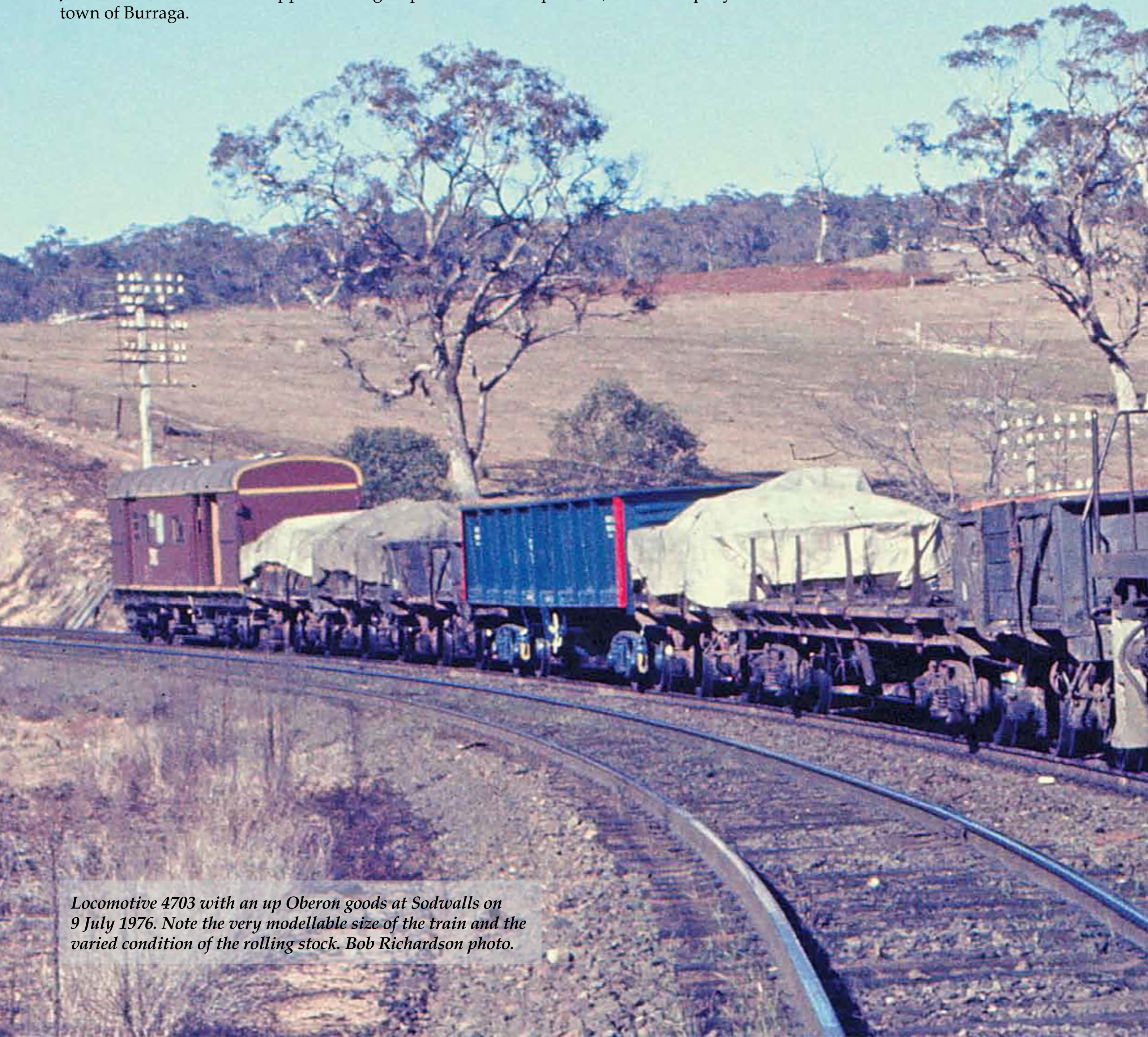
Plans for the Oberon line began in 1885 with the first move to link the small farming and grazing town to the Main Western Line. The plans included the Jenolan Caves and the copper mining town of Burraga.

The Lloyd Copper Company had a private three feet gauge tramway system around the mine to haul timber for mine props and firewood. The company owned two B class two truck Shay steam locomotives for use on the line. By 1908, all suitable timber within a reasonable distance of the mine had been cut and mining operation ceased.

When the line to Oberon was proposed, the mining company put forward a scheme to link their narrow gauge system to Oberon. The original idea to bring the standard gauge line to Burraga proved not to be possible, so the company sought to have their narrow gauge line extended through the mountains to Oberon.

World War I intervened and construction of the line was not authorised until 1919. Available money would not allow the line to be extended beyond Oberon. Motor cars began making the trip to Jenolan Caves in 1903, so the proposed extension to that location was abandoned.

The Oberon line was operated by lightweight steam and then diesel-electric locomotives. Local seasonal vegetables,



Locomotive 4703 with an up Oberon goods at Sodwalls on 9 July 1976. Note the very modellable size of the train and the varied condition of the rolling stock. Bob Richardson photo.

timber and livestock were transported mostly in mixed trains.

The line branched from the Main Western Line at Tarana (198km from Sydney) and passed the stopping places of Carlwood (209km) and Hazelgrove (217km) before reaching Oberon, a distance of 223.5km from Sydney. Carlwood and Hazelgrove would have seen very little passenger traffic.

Substantial siding and loading facilities were provided at Tarana, while Carlwood and Hazelgrove both had siding loops. Both these latter stations also had waiting sheds for passengers.

There were also over 30 level crossings along the line, with more than half of them being private crossings to farms and homes. Many curves on the line had a radius as low as 100m.

Oberon itself justified the line's existence, with primary produce railed out including various vegetables and, in season, special trains were run to carry the pea harvest. Timber, cattle and sheep added to the goods traffic.

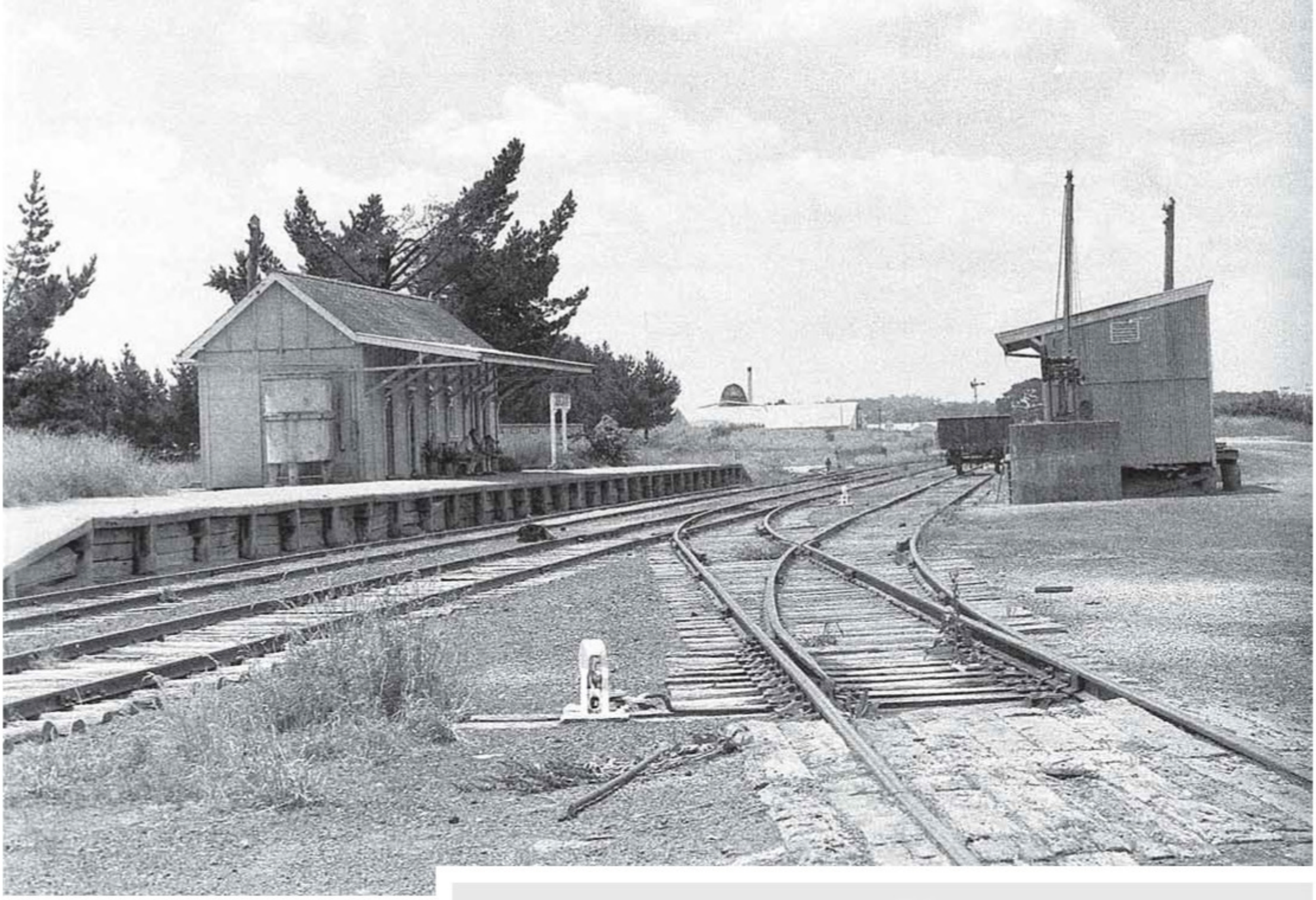
Locomotive facilities at Oberon were very basic and there was no water supply. The turntable originally provided was removed when a turntable was not provided at Tarana. No watering facilities were provided at Oberon, but the 19 class 0–6–0 steam locomotives were equipped with large Baldwin tenders salvaged from the O or J class, which allowed locomotives to run from Tarana to Oberon and return without the need for watering.

The 19 class engines were used on the line, with a HS composite side loading coach with a guard's compartment providing passenger services. A large pine wood factory opened in the early 1960s, extra sidings were laid and traffic boomed.

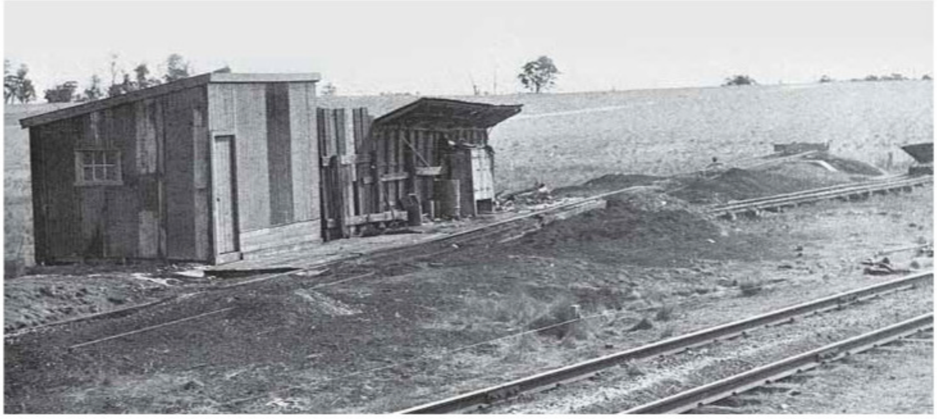
The 19 class engines were found wanting and, during 1963, 49 class diesel-electric locomotives took over. Other diesel-electric locomotives used on the line included 48, 47 and 45 classes.

The timber traffic contract was lost by the railways and passenger numbers dropped substantially. Passenger services ended in 1971 and goods services were suspended on 27 December 1979, with the line effectively closing.

4703
4703
4703

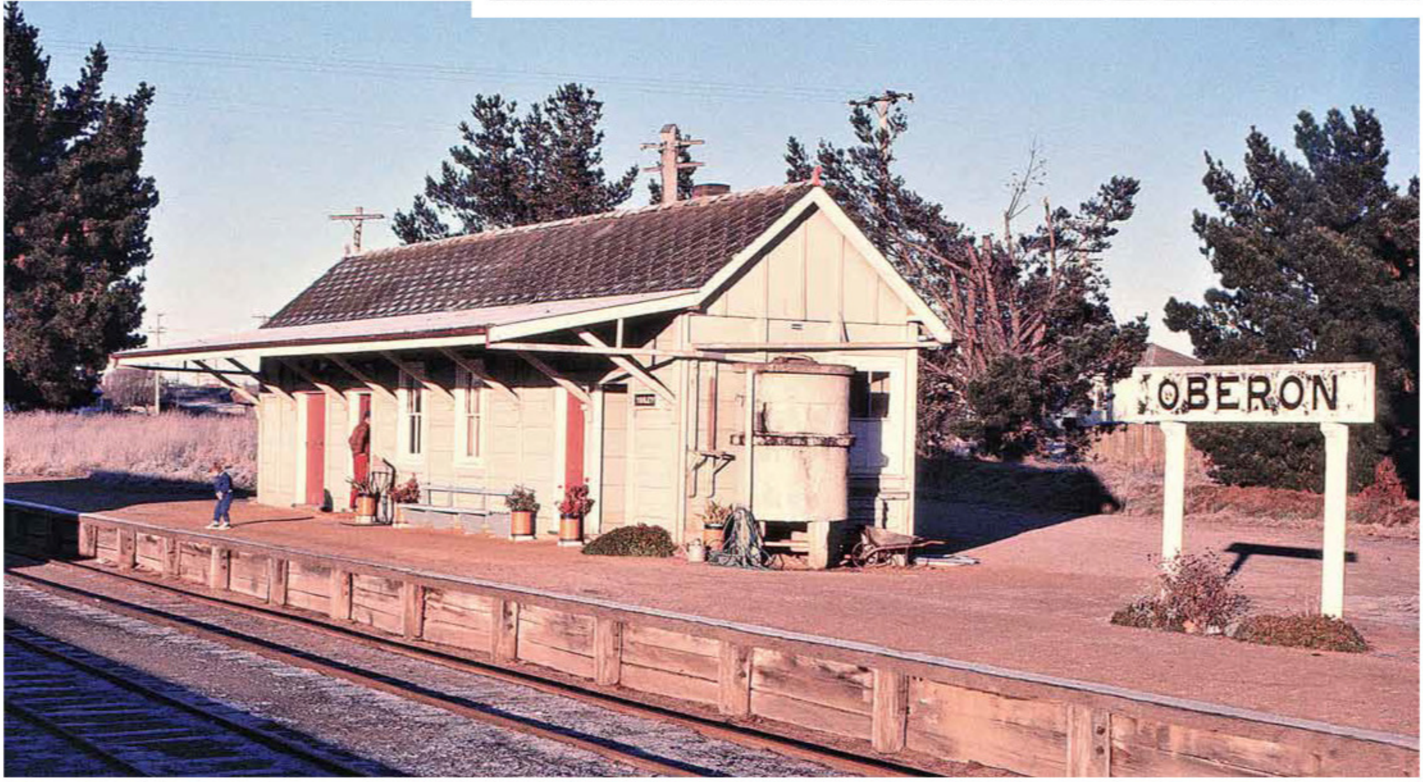


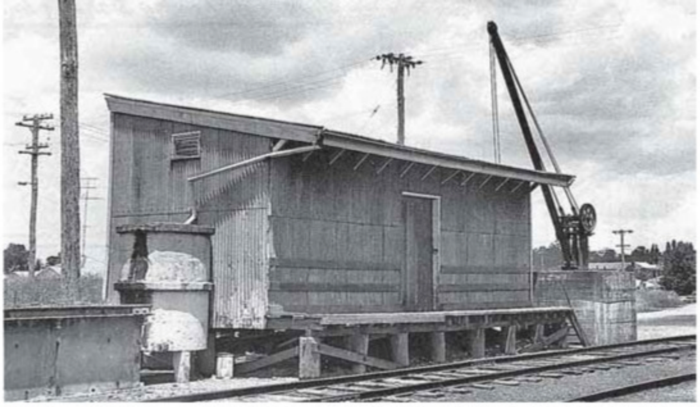
▲ *Oberon station in 1976 from the southern end. The goods shed is on the right. The late Es Davies photo, courtesy Eveleigh Press*



▶ *Oberon loco was very basic. There was a siding with an ash pit and a shed for the engine's supplies. A makeshift windbreak has been erected to shelter crews from the icy winter winds as they go about oiling, de-ashing, etc. Ron Preston photo, courtesy of Transport Heritage NSW*

▼ *Oberon station building on 9 July 1976 from the northern end. Bob Richardson photo.*





Oberon goods facilities consisted of a concrete faced loading bank, a G1b goods shed and a small hand crane mounted on a block of concrete. The late Es Davies photo, courtesy Eveleigh Press

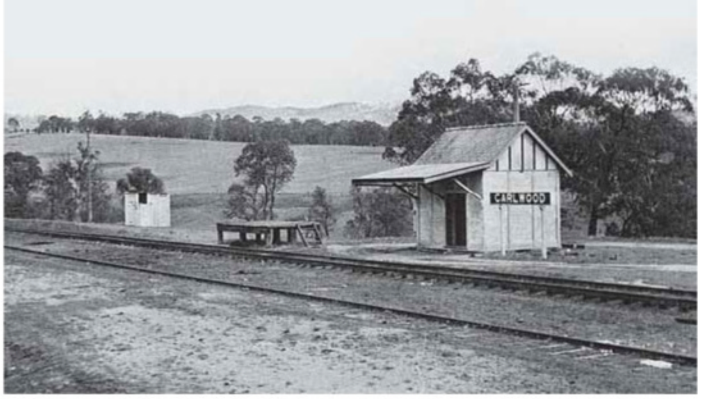
The early history of the line is contained in an article appearing in Australian Railway Historical Society *Bulletin*, July, 1958.

Preservation efforts

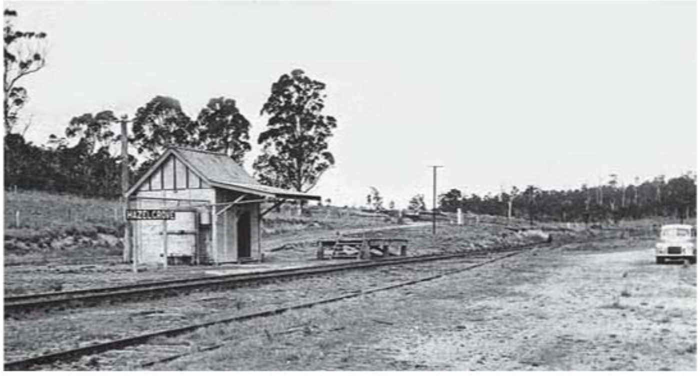
Since 2007, the Oberon Tarana Heritage Railway Inc (OTHR) has been steadily restoring the track between Oberon station and Hazelgrove. Two end platform carriages on loan from NSW Rail Museum (CBA 850 and HLF 854) and some smaller wagons have been delivered and are on the tracks in Oberon yard. Two 73 class diesel-hydraulic locomotives (7307 and 7321) have been purchased and it is the long-term goal of the association to run trains all the way to the mainline at Tarana.

References

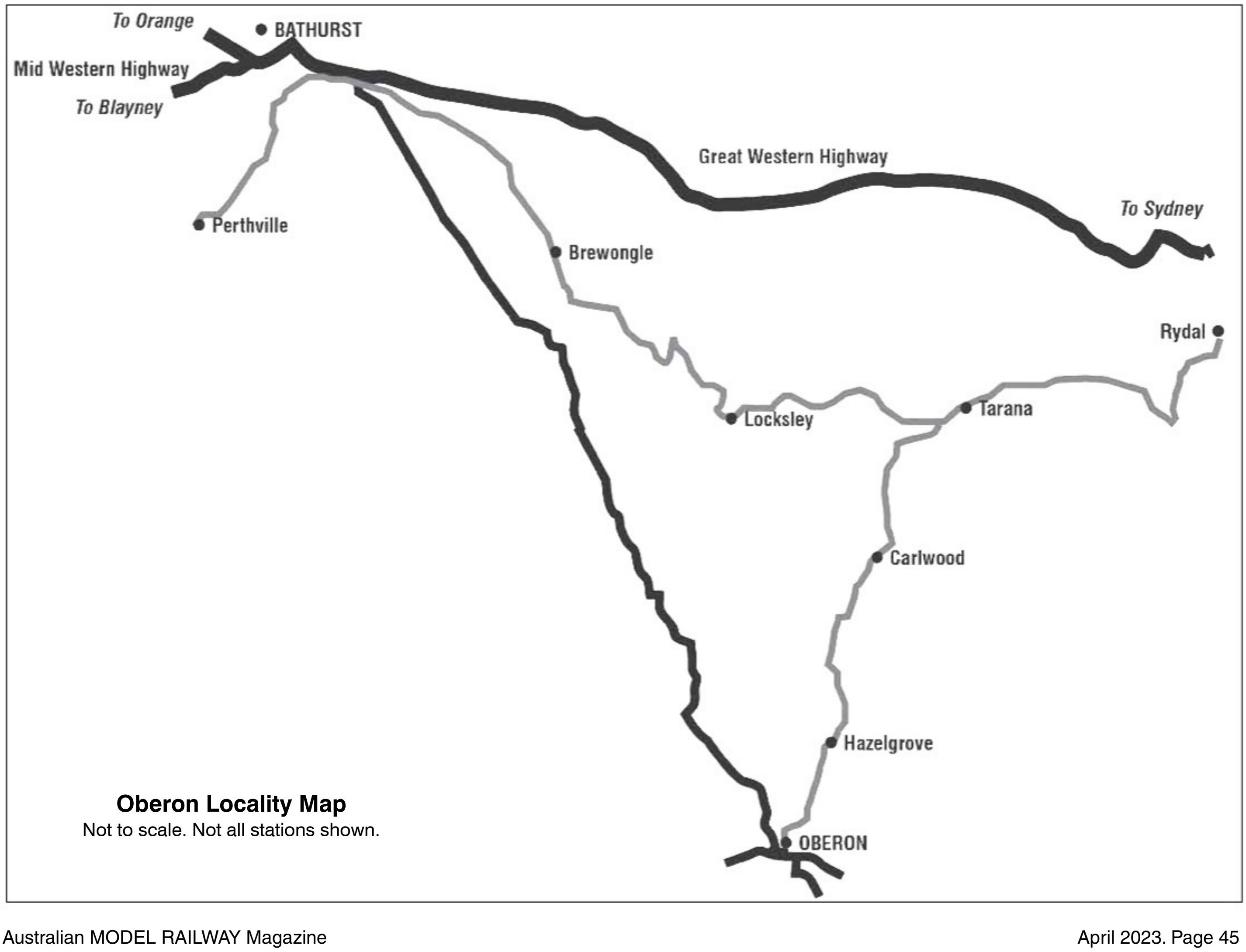
Tender Into Tank, R.G. Preston, 1984, New South Wales Rail Transport Museum.



Carlwood station was set in rolling hill country with Snakes Valley Creek wandering through the trees in the background. The building sat on the ground and a small platform was provided for passengers. Ron Preston photo, courtesy of Transport Heritage NSW


HAZELGROVE

Hazelgrove had a similar arrangement to Carlwood. Ron Preston photo, courtesy of Transport Heritage NSW


To Orange
BATHURST
Mid Western Highway
To Blayney
Great Western Highway
To Sydney
Perthville
Brewongle
Rydal
Locksley
Tarana
Carlwood
Hazelgrove
OBERON

Oberon Locality Map
Not to scale. Not all stations shown.

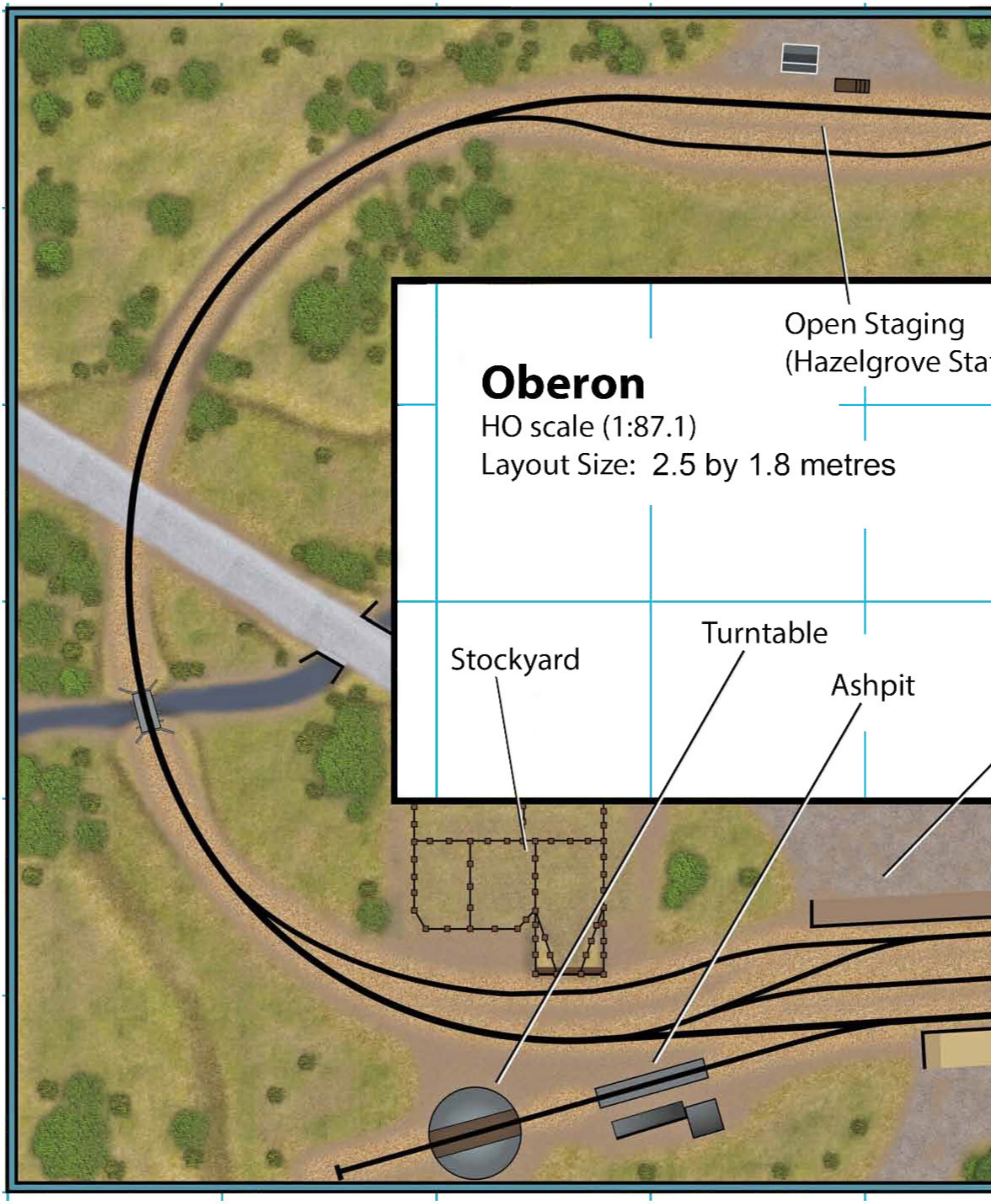
Modelling Oberon

Oberon could easily be modelled to fit into a small space, with a fiddle yard.

Prior to March 1963, the line was worked using 19 class 0–6–0 steam locomotives until the NSWGR introduced diesel locomotives.

Goods were usually carried in S waggons and stock was also transported on the daily mixed train. Around the same time as the diesels were introduced, CSR built a Pineboard facility in the area and the line benefitted from the extra traffic. When there was too much traffic for the mixed, an extra goods train would run. On several occasions up to five goods trains were run each day.

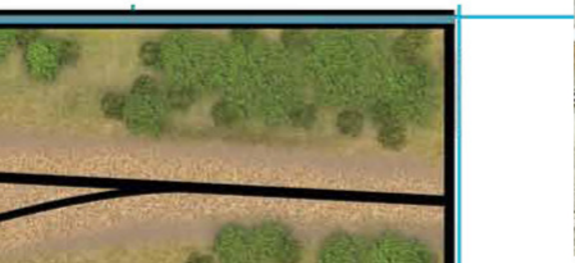
Space permitting, Carlwood and Hazelgrove could be included, with a run to a fiddle yard representing Tarana. Fitting Tarana into a layout might be a

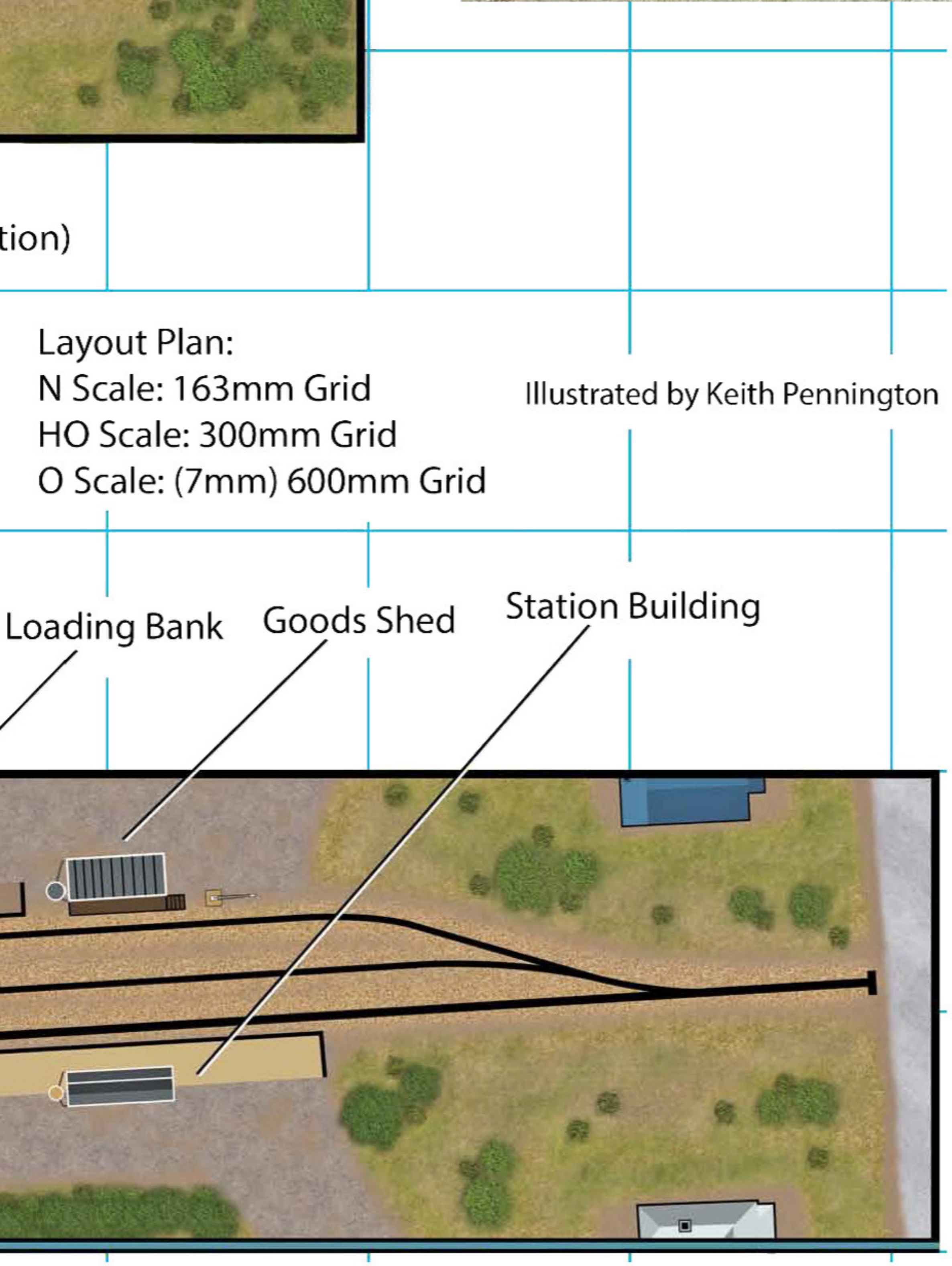

Open Staging
(Hazelgrove Sta
Oberon
HO scale (1:87.1)
Layout Size: 2.5 by 1.8 metres
Stockyard
Turntable
Ashpit

challenge but, if you have the space, it would provide a mainline to run more trains.

The proposed plan is 2.6m by 1.8m, includes Oberon and Hazelgrove, which is set up for open staging (no fiddle yard required).

Regular Oberon line locomotive 1942 at Hazelgrove with a passenger train consisting of a composite car and SHG brake van. The station building can be seen just behind the train. Graham Ahern photo



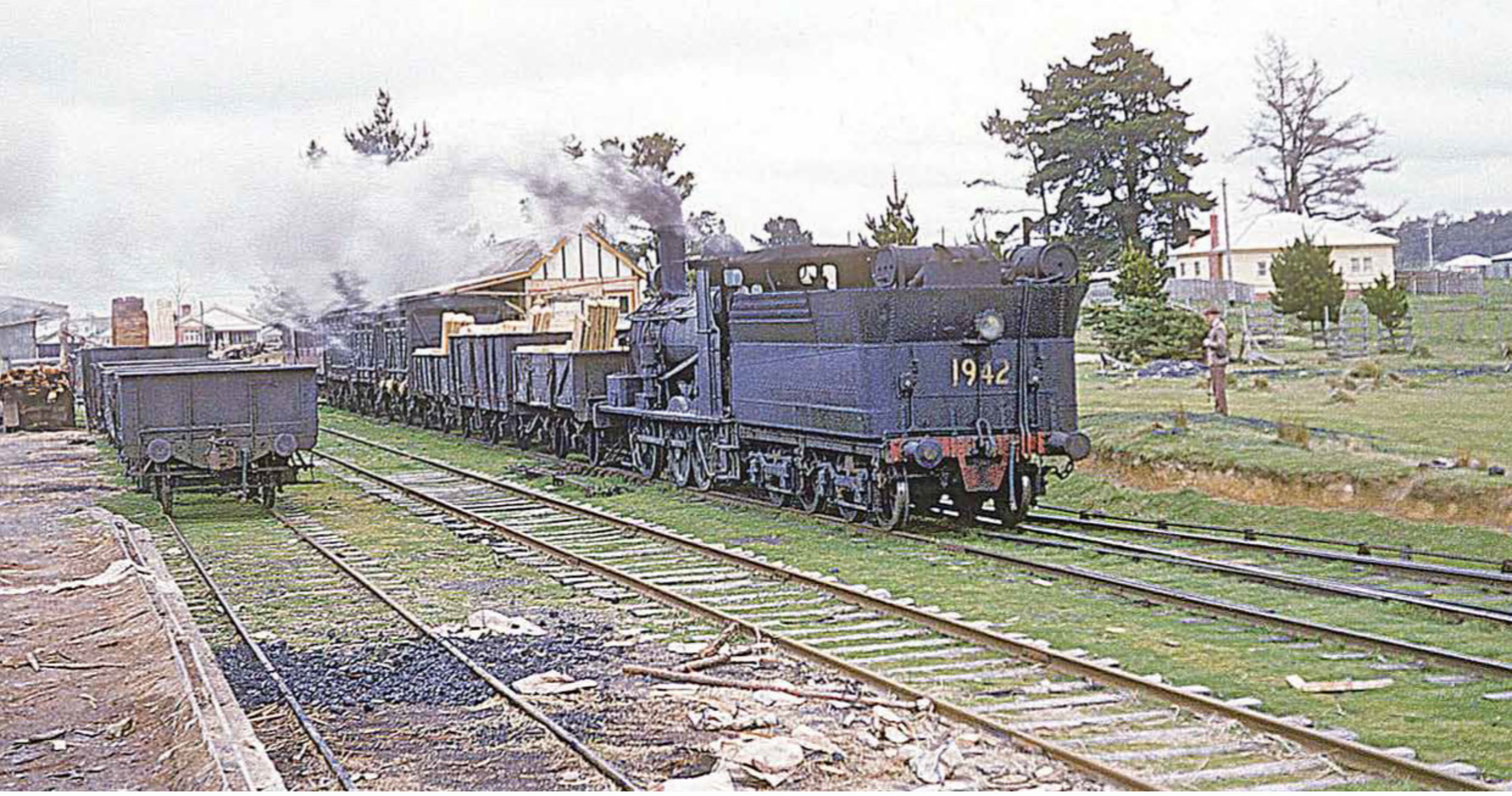


Layout Plan:
N Scale: 163mm Grid
HO Scale: 300mm Grid
O Scale: (7mm) 600mm Grid

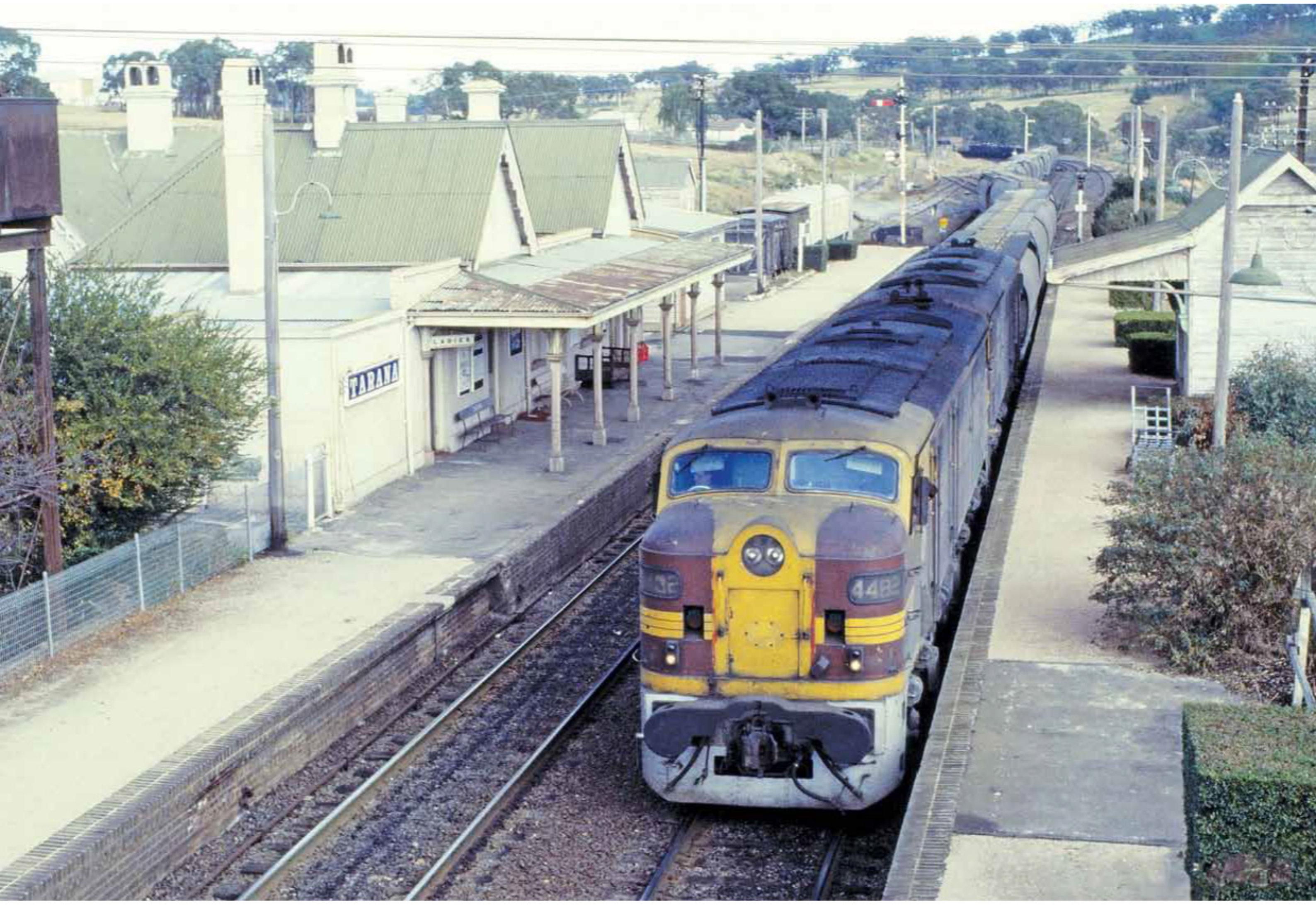
Illustrated by Keith Pennington

Locomotive 1942 crosses Snakes Valley Creek with the same passenger train seen in the photograph at the top of the previous page. Graham Ahern photo

On 24 September 1955, a 53 class heads through Tarana with a goods train, while locomotive 1942 prepares its train for the run to Oberon. Noel Reed photo



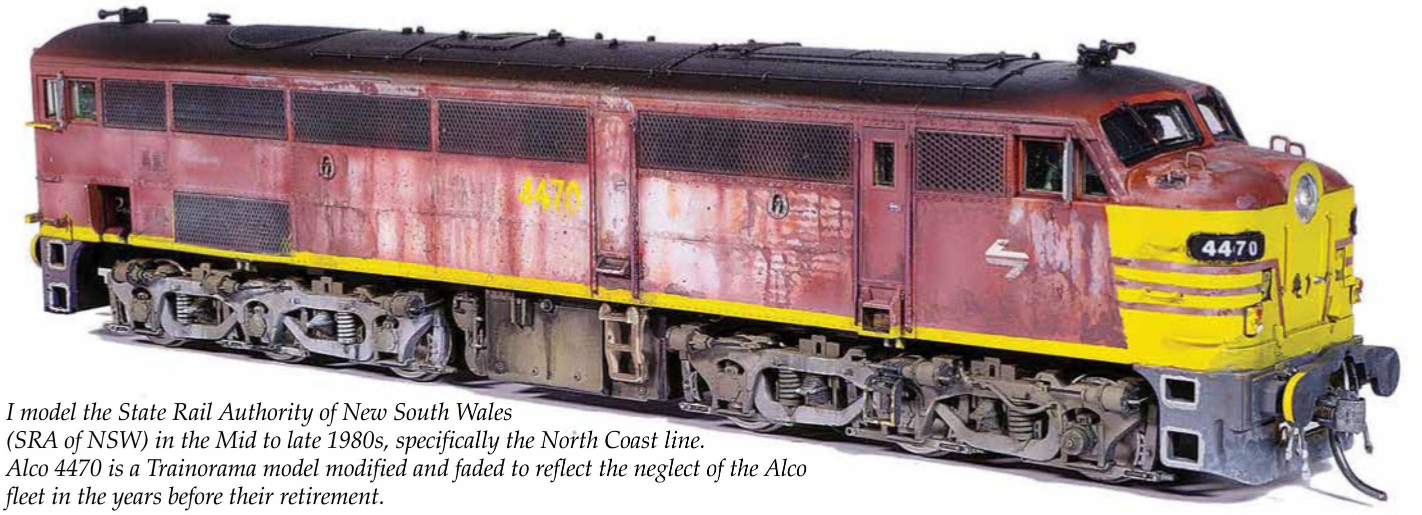
A few hours after the above photograph was taken, 1942 shunts its train at Oberon. The station is in the background in front of the engine and the loading bank is on the left with some open wagons to be loaded. Noel Reed photo



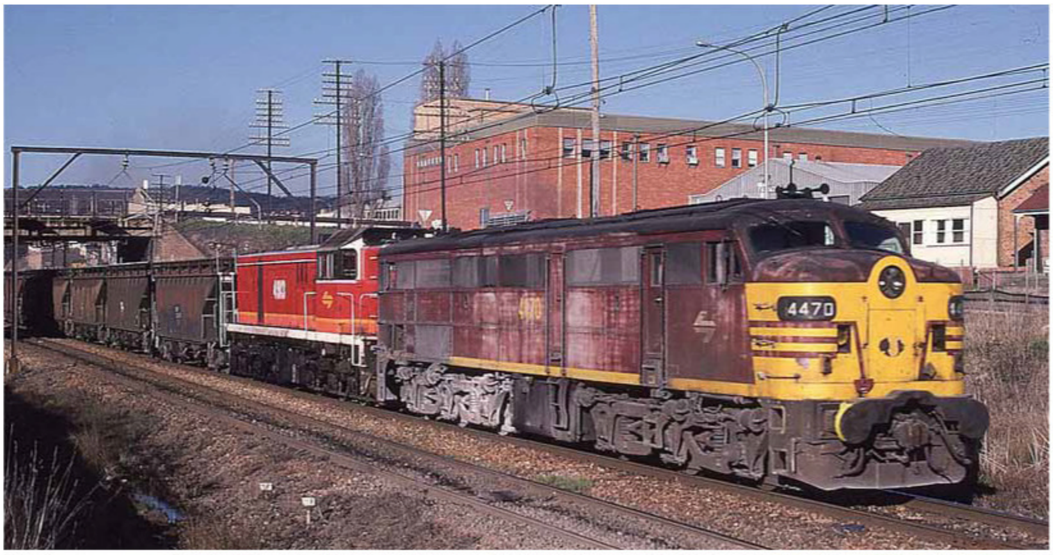
Alcos 4482 and 4426 snake through Tarana yard with an up goods train 15 May 1978. Bob Richardson photo.

Reader's Gallery

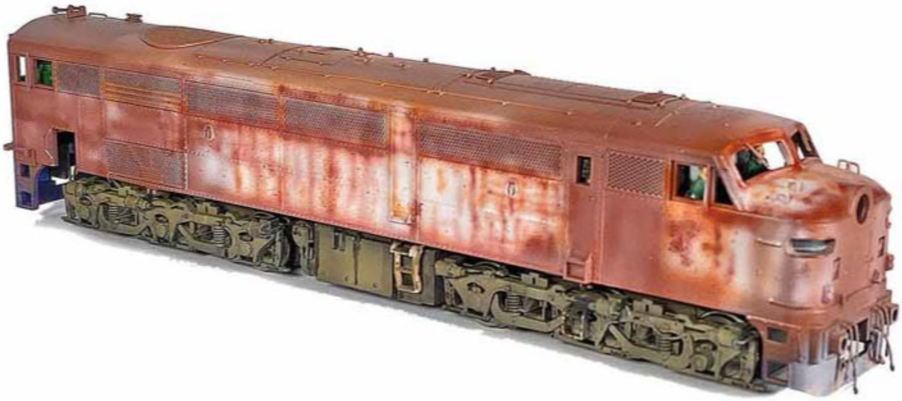
Justin Moy displays his recent techniques for creating faded livery effects. Photos by the author, unless otherwise credited.



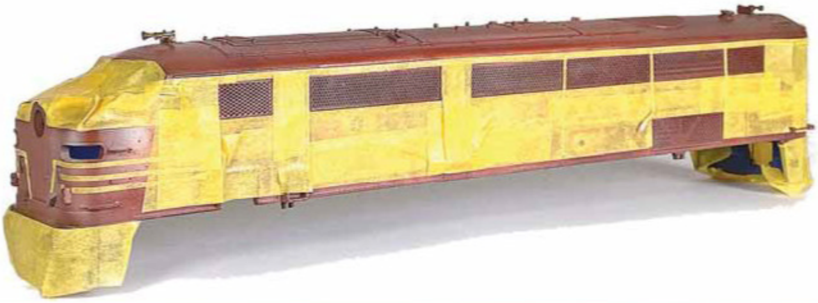
I model the State Rail Authority of New South Wales (SRA of NSW) in the Mid to late 1980s, specifically the North Coast line. Alco 4470 is a Trainorama model modified and faded to reflect the neglect of the Alco fleet in the years before their retirement.



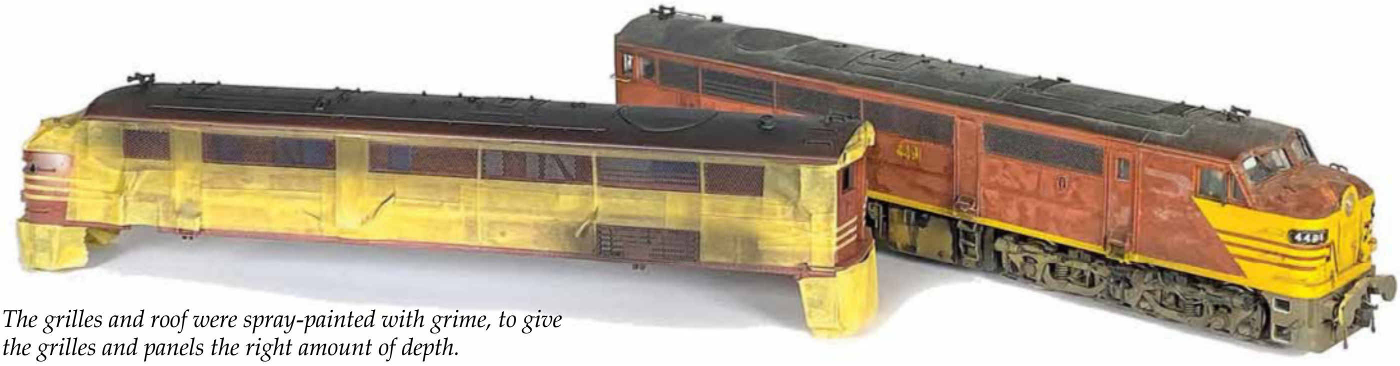
Inspiration for this project was this prototype photo Taken by John Hammett of 8W41 freight with 4470/4913 as it departs Lithgow for points west on the 29 August 1988.



At the start of this project, I stripped down the body of all details required for the initial paint work. Paying close attention to John's photograph, I applied the base colours in the general areas I thought needed with my Dual Action Air Brush. This photo shows just Air Brush work using Railey's Tuscan and Indian Red, with Tamiya XF-2 enamel white added to the paint constantly until the last paint sprayed was nearly white. I did go over some spots with the original Tuscan at the end if I thought I had overdone the lighter areas.

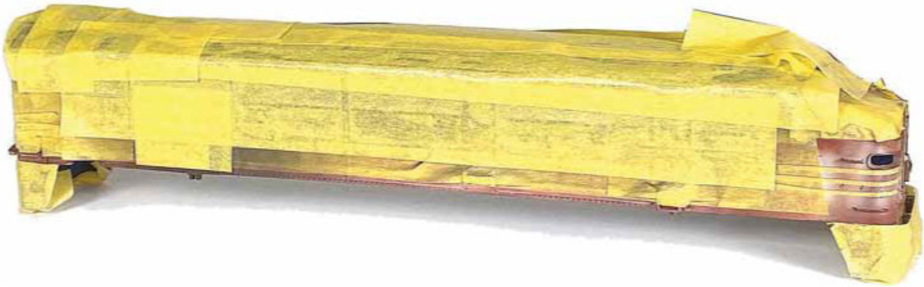


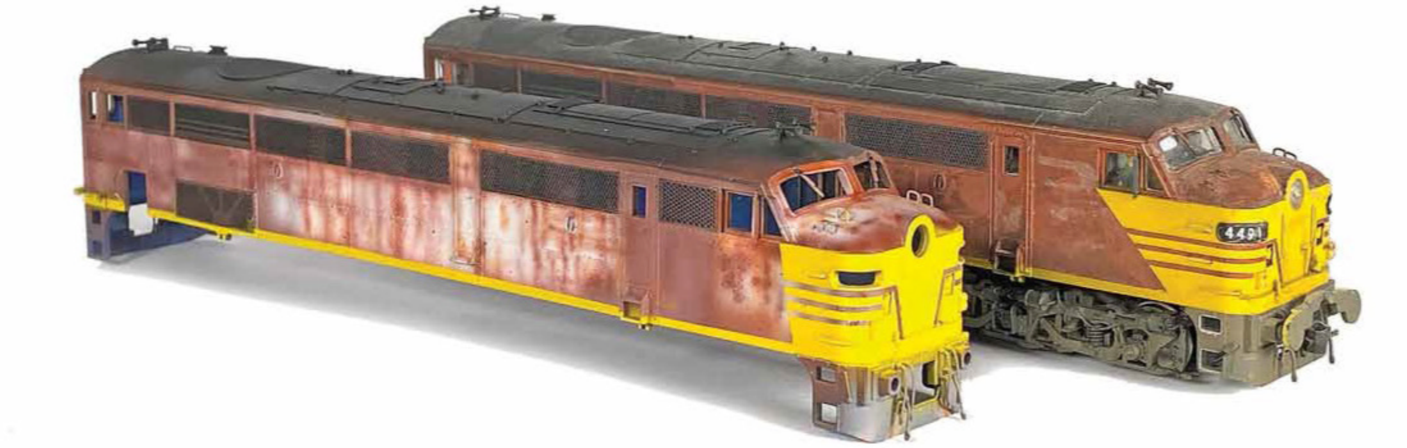
After fading, the body was masked exposing the grilles, roof and the yellow 'beak' on the nose.



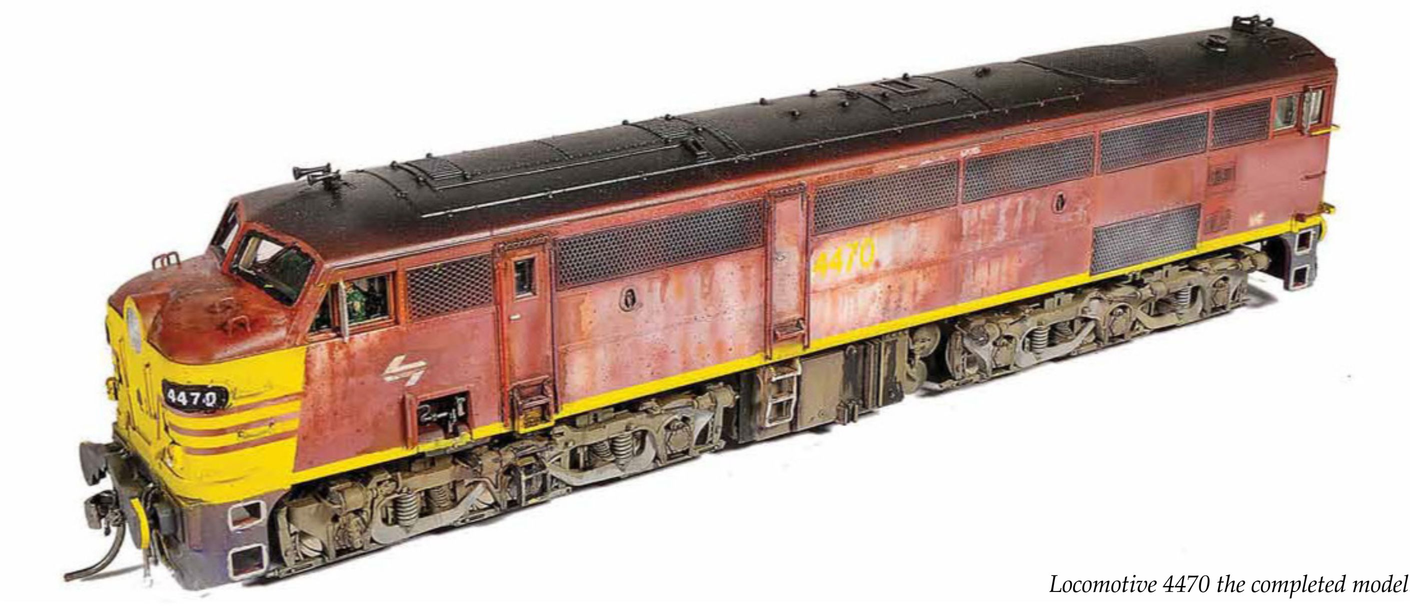
The grilles and roof were spray-painted with grime, to give the grilles and panels the right amount of depth.

Finally, everything was masked, with the exception of the yellow ends and the frame stripe locations, which were sprayed with Railey's Chrome yellow. Just a note, I always keep any previous work close at hand as a reference. Sitting them side by side helps as I work, keeping track of the colours. At this point I left the model to sit for a few days to let the paint fully cure.

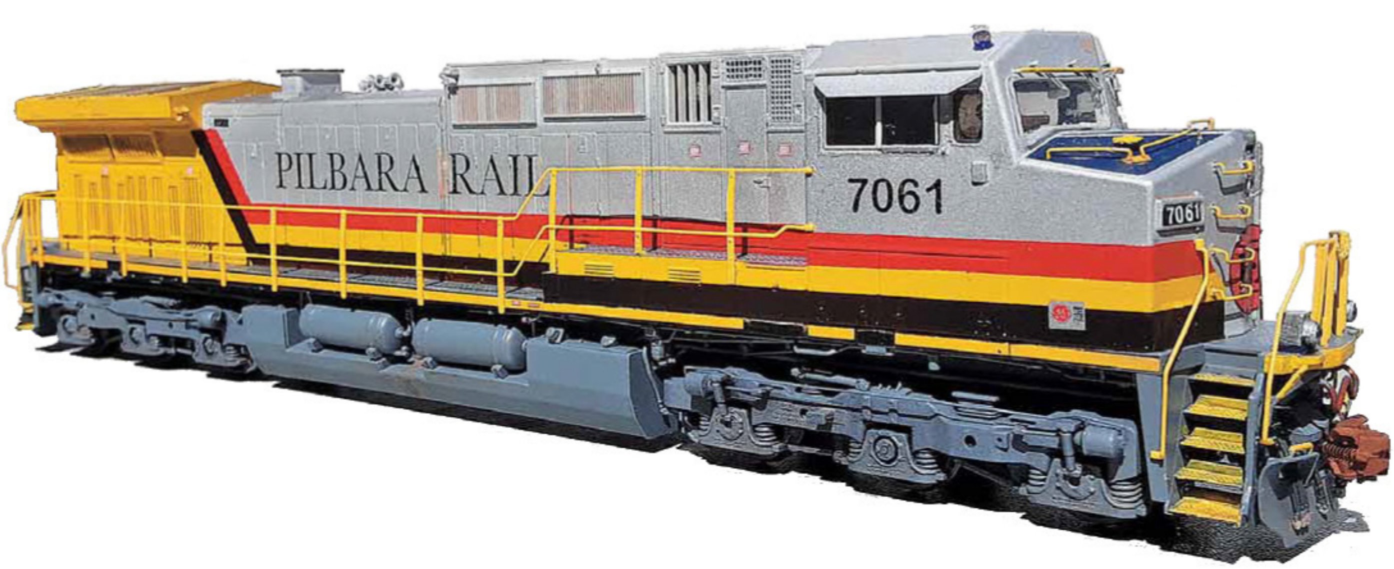




All the work from this point was with a paint brush. Allowing the paint to fully cure enables the use of washes of enamel paint diluted with mineral turpentine. The fine washes can be dried quickly by breathing on them before the mineral turpentine can do damage to the original coat. I find this works well, going over lighter areas with slightly darker colour until I get the right shade for the required area. Final work was to apply decals and add all the detail and clear coat.



Locomotive 4470 the completed model.



Painting a Pilbara Rail Dash 9-44CW locomotive

Gary Lamb, repaints a new Athearn model to replicate his favourite prototype. Photo by the Author.

For several years now I have wanted to add a Rio Tinto/Pilbara Rail Dash 9 locomotive to my fleet of Pilbara locomotives. I have always admired the paint scheme that was applied to these locomotives ever since they turned up on site.

The scheme of silver, yellow, red, black and grey is a combination of Hamersley Iron and Robe River Iron Associates rail operations when they were amalgamated to form one rail system. At the time, as rail employees we transferred to the new joint rail operation that was called Pilbara Rail (PR).

There is a lot more to the history of the amalgamation into today's Rio Tinto rail operations, but that's for another time.

The Model

With the recent release of Athearn's new Genesis Dash 9 depicting the Fortescue Metals Group (FMG) version of this locomotive [*See the review of this model in the February 2023 issue No. 358 of AMRM*], I saw the opportunity to reproduce the PR locomotive by repainting the FMG model.

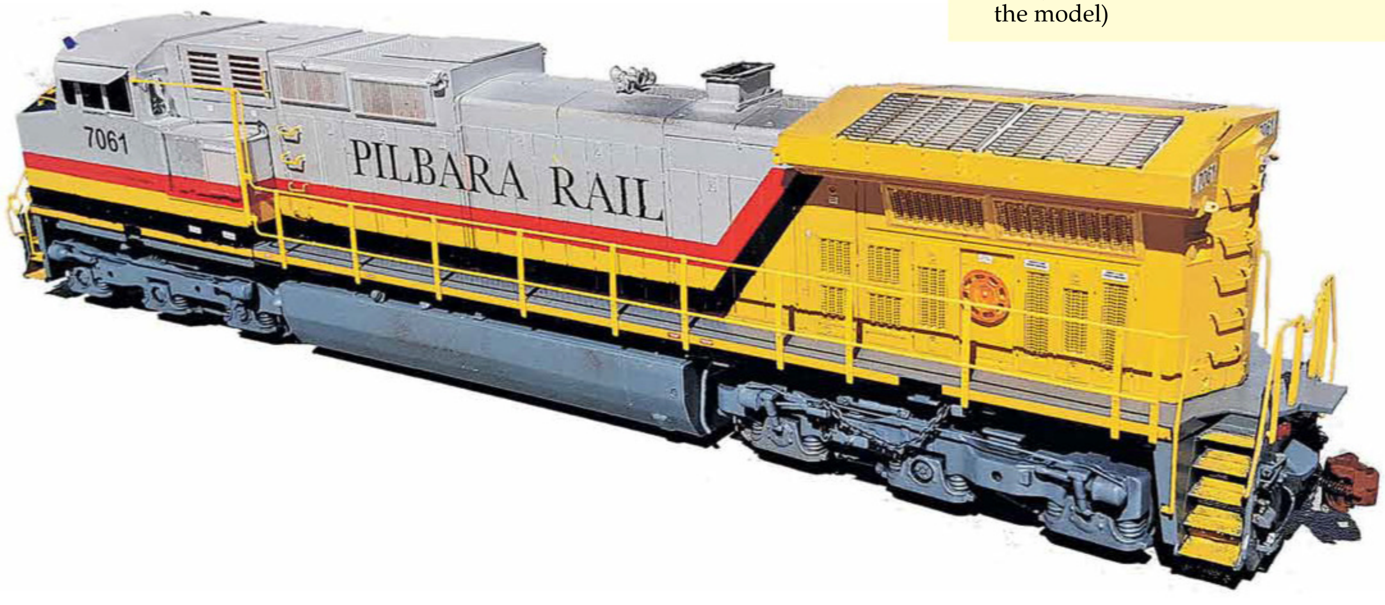
The first thing I did with this model was to change some of the CV settings to get it to run a lot better than it did out of the box. I also changed the ditch lights to flashing when the horn was sounded.

The next step was to tear down the model to paint it. I found that this was not as difficult as I had imagined when I first looked at it.

Materials

The following is a list of paints used during the project:

- **Undercoat**:
  Tamiya white surface primer/undercoat
- **Body colours**:
  SMS Yellow trainer FS 33538
  SMS Gloss black
  SMS Gloss red
  SMS Metallic super silver
- **Chassis**:
  Tamiya Light grey XF 66
- **Clear**:
  Humbrol clear gloss (for decal application)
  Army Painter matt varnish. (to seal the model)



I left the cab attached the hood body due to the wiring and LEDs inside the cab area.

Note: The electrical connections between the body and the chassis are achieved by plungers in the body contacting pads on top of the chassis, thus eliminating any hard wiring, (something other manufactures should note.)

The windows are held in place with a type of tacky glue, making them very easy to remove and replace. I didn't strip the model with paint stripper of any type. I just used some wet and dry (1500 grit) to remove the lettering and smooth the separation line between the white and the blue colours. Before spraying the undercoat, I masked the headlights with Humbrol liquid masking and filled the cab with tissue paper, a trick shown to me at a model airplane show. I also masked the yellow strip along the footplate so I didn't have to repaint it later.

The model was sprayed with Tamiya fine white undercoat/primer and left to dry overnight. I then painted the body silver. Once dry I started the long and finicky task of masking up for the stripes. It is important that these stripes are straight and even, otherwise the model will not look correct and stand out.

I use Tamiya masking tape for all my painting; it comes in many sizes and is readily available in hobby shops. To get it to adhere to the model, I place it on the area to be masked, rub it into the hood door edges and joins with a tooth pick, then rub it down with a cotton bud. I have never had an issue with the masking tape removing any paint being masked and always get nice crisp lines between the colours. Just take your time and check your work before you spray any paint; time spent here is worth the effort.

I did the yellow first, followed by the red, finishing with the black. It took me a day to mask and paint all the lines, but patience and careful work paid off in the end. To paint the chassis, I simply masked the mechanism and airbrushed the rest, cleaning the wheels once dry. Finally I applied a coat of Humbrol clear gloss to aid in decal application.

I made the decals using Microsoft Word to produce the lettering and road numbers. The rest came from a Microscale Dash 9 sheet for some of the labelling. This is not as per the Rio Tinto standards, but for me it was close enough. The red 'HI' on the cab nose is from a 'Signs of all Kinds' decal set I had. Once painted, the model was sealed with clear matt varnish (Army Painter matt varnish). I reassembled the model, cleaned the wheels and gave it a test run.

It should be noted that I didn't attempt to model the red marker lights, with which all Rio Tinto locomotives are fitted. I didn't want to mess that up and spoil the model. I will have a think about what to do here and come back to it at some stage.

Conclusion

If I had to express some level of dissatisfaction with the model itself, I found it is very fragile. I managed to lose some of the detail parts that just wouldn't stand up to any rough handling, such as the coupler lift bars and windscreen wipers, so be aware. I also found the footplate handrails to be a bit wavy and, for a state-of-the-art model, it didn't have a Stay-Alive that should really be included these days, noting the price of the model.

However, I am happy with the results. Whilst the FMG locomotives have a slightly different spec to the PR locomotives, the model is very close and it fills a hole in my Pilbara fleet very nicely.

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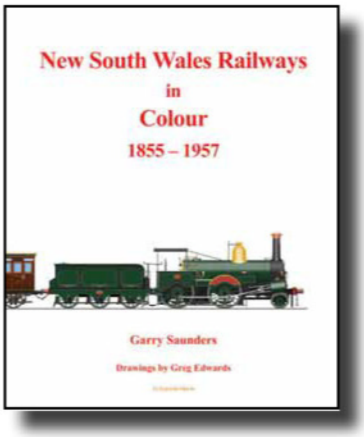
by Garry Saunders with drawings by Greg Edwards



This book will take you on a journey through 100 years of the history of NSW Railways, from its beginnings in 1855 at the dawn of the steam era until 1957 when the legacy of the steam locomotive passed on to newer and more capable technologies. Along the way we will look at over 320 items of rolling stock and briefly describe their place in the history of NSW Railways. Locomotives of all types (steam, electric, diesel-hydraulic and diesel-electric) will be discussed as will railmotors and rail cars, passenger carriages, goods wagons and support vehicles. Tramways, an integral part of the Railway administration for many years, including horse, steam, cable and electric trams, have also been briefly discussed. As far as possible this journey will be brought to you in colour. Following many years of research and analysis, the history that we have known from black and white images can be brought to life in the colours that people of the time would have instantly recognised. The research has uncovered many original samples of paint colours taken from the fabric of NSW Railways historic vehicles which have been analysed to unlock a wealth of information about the pigments, paints and colours that were actually used at different times during this hundred year period. During the course of this research a great deal of new information has been uncovered, including NSW Railways documents describing the paints and the pigments used to make them, newspaper articles describing the liveries of the time, Parliamentary notes, long lost archives files and interviews with some of the men who were apprentices at the Eveleigh Carriage Paintshops in the early 1950s. The results of this research have been used to create images of hundreds of items of rolling stock as they would have appeared, showing how their liveries evolved, influenced by the aspirations of the various personalities involved in the development of the Railways, the fashions of the time, evolving paint technology, wartime and social change.
Illustrator for this book, Greg Edwards, has interpreted the data uncovered by this research to prepare more than 130 colour drawings to bring this black and white world to life.

$145.00 plus postage

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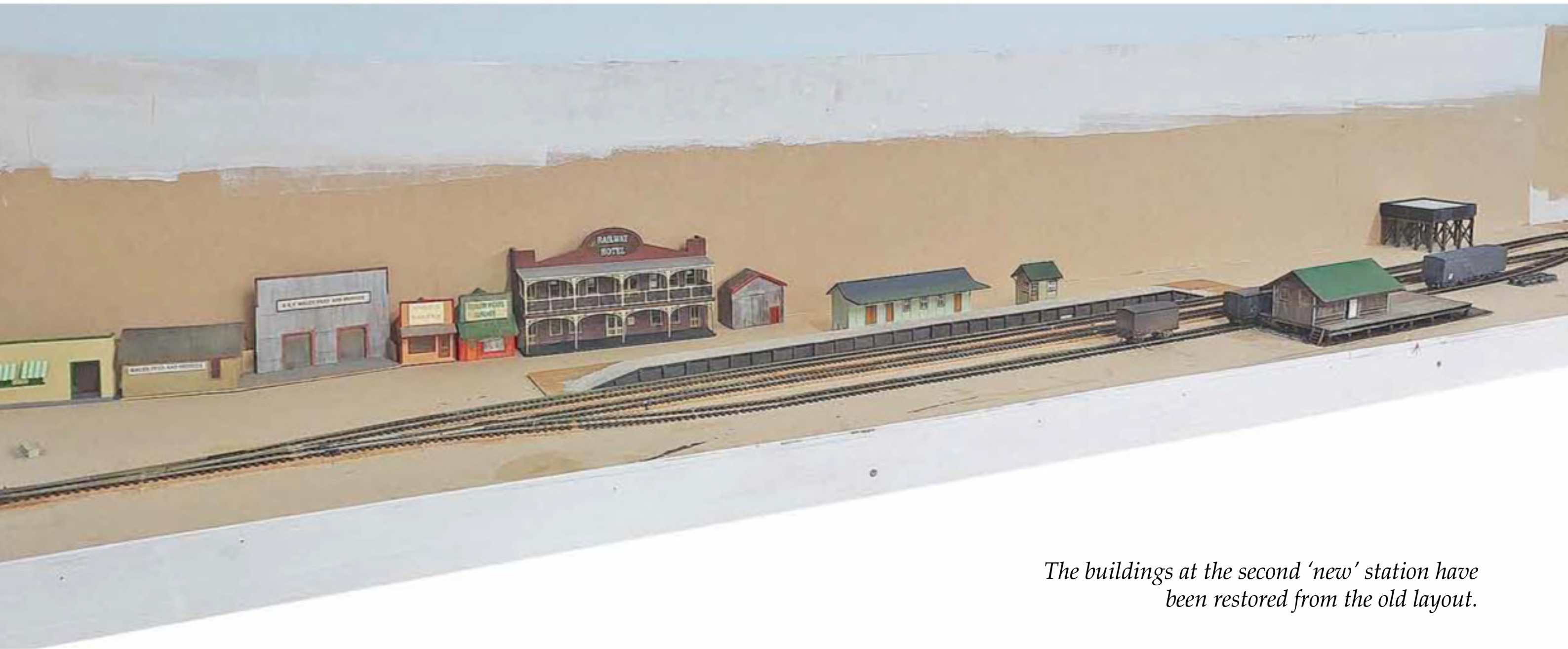


The buildings at the second 'new' station have been restored from the old layout.

After the Fire Pt. 2

Will Tyers discusses his new layout, after the fire. Photos by the author.

In the last article (AMRM No.358 February 2023) I briefly detailed the loss of my layout in a fire and what the aftermath was, both in terms of damage to the layout and dealing with insurance. So now, we are re-established in our house.

During the period since the fire, consideration was given to my future in modelling. It didn't seem likely that I would give up modelling. The question was what to model and that didn't seem to extend to other forms of model making. No other form of modelling offers the diversity of model railways. That bought me back to building another layout.

Brief consideration was given to modelling in a different scale and/or narrow gauge. I have always liked narrow gauge so that temptation was strong. Knowing what is available commercially and what was recoverable from the previous layout, continuing in HO seemed a sensible and logical decision.

Scale chosen, the next decision was what to model. I remain partial to Australian outline, particularly New South Wales (NSW) and, to a lesser extent Victoria and then other states. As mentioned in the previous article, I had started to repair items and build some NSW kits recovered from the fire. Several buildings have been repaired and repainted. Some cattle wagons have received new bodies from Casula kits, a few other pieces of rolling stock may be repairable using a similar approach, which reduces the time spent on chassis construction. A 44 class received a new body and several other locos are operational chassis needing new bodies. A brass 32 class mentioned previously still refuses to be separated from its paint. Some other items may yet be salvaged. Given these things, prototype chosen.

The layout space had already been decided as it was rebuilt, recarpeted and lighting installed in the course of insurance repairs. So, I have a space, approximately 12m x 3.6m

The next thing to consider was what/where to set the layout. The Western slopes and further West of NSW are always popular with modellers, but I have always leant towards the coastal areas. It means solid gradients and relatively tight curves, which limited trains right up into the 1980s when high horsepower locomotives and longer passing loops started to appear. I have previously, and decided to continue, modelling pre 1973 which allows early diesels and some steam to be used. The coastal environment means shorter trains due to all the above factors'

The idea of a fictional NSW South Coast layout was born. Not original, but it meets the criteria above as well as allowing some degree of freelancing (proto freelancing). The article in August 2021 AMRM on Darren French's *Cann River* added further inspiration. Like Darren, I conceived of an early conversion to standard gauge by Victoria (perhaps following the recommendations of Harold Clapp) and a connection from Gippsland into NSW.

As a context for the proposed layout, I created a history of the south coast was created giving the reasons for the development of the railway.

Layout Design

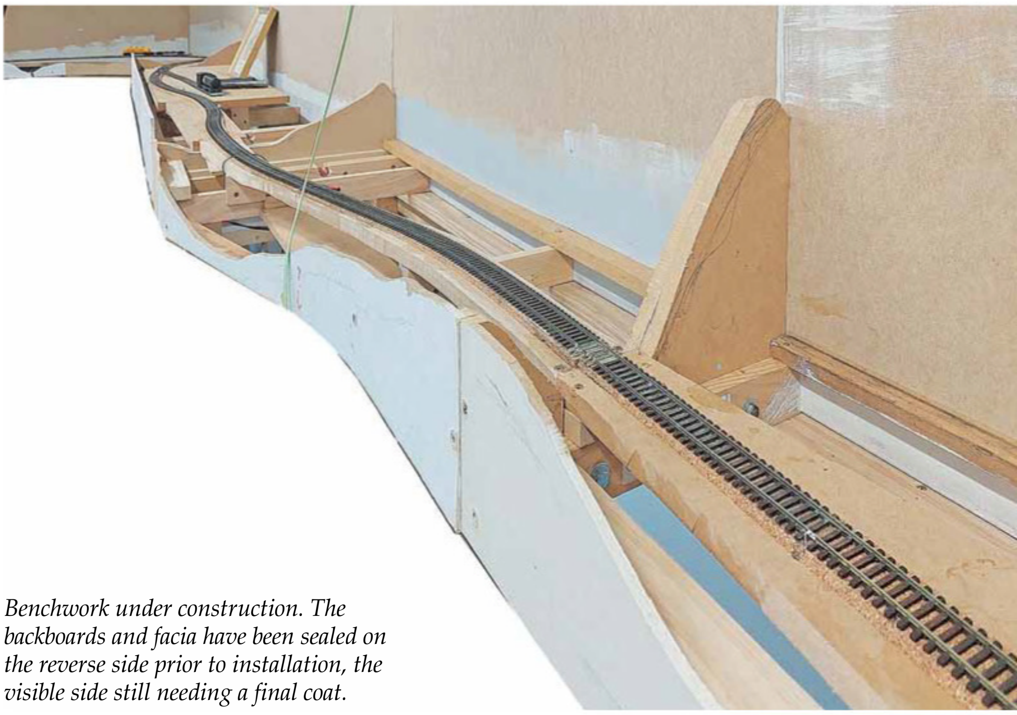
Layout design started with the usual sketching and resketching. It was eventually decided that the previous footprint was the best use of the space available. On the previous layout it had taken a lot of time and planning to work out best use of the space and so a nearly identical footprint will be used, but single level. The original layout was an overly ambitious design of multiple levels. Too much time was spent working out and building elaborate designs. I do not have enough life left to be so ambitious. This brought up the next question; what height above the floor? A level of 1200–1300mm above the floor has been decided on. This reduces the amount of bending and crawling under benches.

A plan is developing, some on paper and some still in my head, but enough has been determined to start construction. So far, the design of the new layout will be point to point with storage at each end. It includes three through stations based on the standard NSW three track design i.e. main, loop and goods. A 4th larger station will be a Junction. There may be a fifth station depending on final design. Goods and stock loading will be at each station and to these will be added additional industries, including at least a dairy factory, fishing co-op, quarry, meat works and oil depots. It is my aim to have about 25 feet (8m) between stations measured from platform end to platform end. Minimum mainline curve radius of 30 inches (750mm) with, if necessary, sidings to minimum 24 inches radius (600mm).

Baseboard construction

As indicated in the last article, construction has started, even if the whole design is not finalised. L girders are made from 45x20mm pine supported by 45x45mm legs. This may seem light to some thinking, but has proven strong enough to support the last layout and even to sit on.

On to this basic frame support of L girders, the layout is built as modules using 45x20mm pine. These modules, while not readily portable, will be able to be disassembled and moved if necessary. Straight modules are mostly 2.4m long with a couple approximately 1.2m to fit the room. Widths vary from 300mm to 600mm. Corners are more difficult and built individually to suit the location and the intended use. It is intended that the modules can be lifted out to work under the layout if necessary. So far, all wiring has been done without using this feature. It is doubtful this will work as I haven't come up with a way to support the section when lifted. Good idea, difficult to implement.



Benchwork under construction. The backboards and facia have been sealed on the reverse side prior to installation, the visible side still needing a final coat.

Sub-roadbed is 16mm Medium Density Fibreboard (MDF). I have found this to be stable in my environment. I am fortunate that the room is relatively constant both temperature and humidity wise. I had no problems with MDF swelling, bowing or sagging previously. The traditional plywood, in my experience, needs to be at least as thick not to suffer these problems and costs a lot more. The MDF is sealed on the underside and edges to limit moisture absorption. The top will be sealed with track and scenery. Facias and backboards are built with 6mm MDF. I have used hardboard for backboard and fascia, but doesn't seem to be available any longer as large sheets [**Editor note**: *Large 3.6m length sheets of MDF can generally be obtained by special order from your local hardware store.*] so MDF in this application is a little unknown. Again, it is fully sealed on both sides and edges.

Track and wiring

Peco code 75 track is to be laid on cork roadbed. As I dislike nails and the holes they leave, I am gluing track with dilute (50:50) PVA prior to painting and ballasting. I am not sure how this will work. It is slower to lay and often requires weighting until the glue dries and may lift when wet down for ballasting, but I am hopeful that it will stay put once set.

Wiring is for DCC. Here, several decisions are still to be made. Will it be wired to switch between DC and DCC as was the old layout? Either way, I wired this layout in blocks, which will also help with trouble-shooting. How many and where to create power districts? What short circuit protection to incorporate? How many outlets in the control bus and how far apart? One thing I am certain of, DCC is not easier to wire than DC, particularly if the recommended dropper to each length of rail is adopted [**Editor note**: *adding additional droppers for DCC operation is a modellers prerogative rather than a hard and fast rule*]. I am not that enthusiastic, but I have installed additional droppers.

The big advantage of starting a new layout is that you can avoid the mistakes that you made on the last layout. Hopefully, there will be fewer new mistakes to make on this construction. But that is the joy of layout building.

Restored or partly restored rolling stock from various manufacturers. The MRC and former SRC are scratchbuilt following Howard Armstrong's article in AMRM issue 18 January 1966!

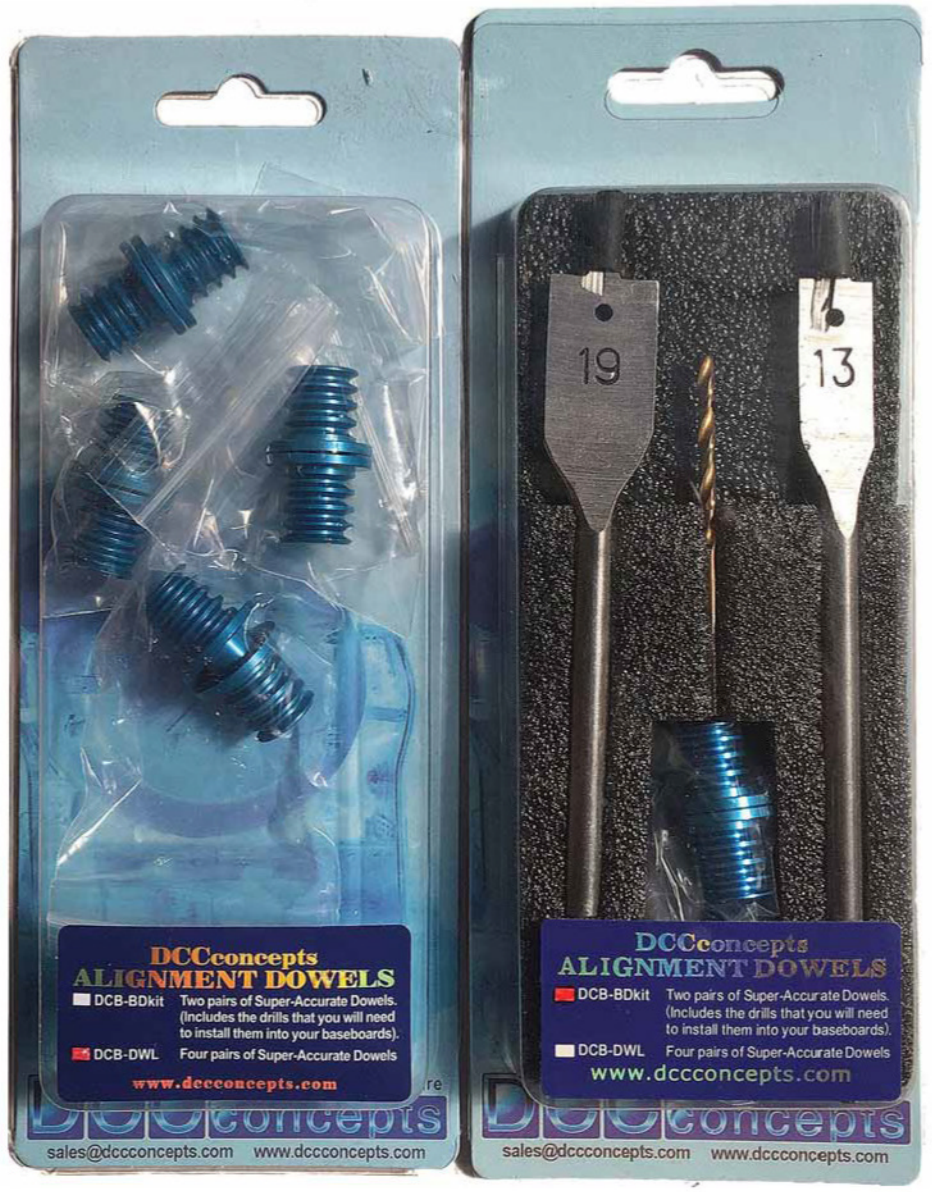

DCCconcepts
ALIGNMENT DOWELS
DCB-BDkit Two pairs of Super-Accurate Dowels. (Includes the drills that you will need to install them into your baseboards).
DCB-DWL Four pairs of Super-Accurate Dowels
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Photo 1.

DCCconcepts Alignment Dowels. Price in text.
Phone: +44 (0) 1729 821 080.
Email: sales@dccconcepts.com
Website: https://www.dccconcepts.com

Having built many exhibition layouts, I am continually looking for ways to make board joins more robust, construction simpler and track alignments more accurate.

Thankfully, DCCconcepts have released a board alignment dowel kit.

Two kits are available (photo 1):

- DCB-DBkit contains two pairs of dowels and drill pack consisting of a 3mm, 13mm and 19mm drill and spade bits ($31.99AUD)
- DCB-DWL contains four pairs of dowels ($31.99AUD).

Eighteen pairs of dowels were required to fit out the latest layout, which consists of eight boards, one DCB-DBkit was purchased along with five DCB-DWL packs.

The instructions are printed on the back of the cardboard blister pack. The first joint was set up for pilot drilling per the instructions, see photo 2. A key part of this is to ensure that the track base is level across both boards. I went a little overboard and not only clamped the boards but inserted six temporary screws (just to be sure). Additionally at this time I installed 'tool box clips' which are used to 'clamp' the boards together.

As per the instructions, I drilled the 3mm pilot hole at 90deg to the board ends. The clamps and temporary screws were removed, and the boards were separated. The 19mm spade drill bit was used as per the instructions to create the inset lip in the face of the board. After experimentation, I realised that I could use the female dowel as a depth gauge for the 19mm lip depth, simply by inserting the female dowel into the hole. You can easily gauge the depth by feeling for a step between the ply and the dowel. If you use five ply timber for construction, as you drill through different ply sections the colour of the ply will change through each lamination. This will alert you to a change of depth and tell you if you are drilling true and level, see photo 3.

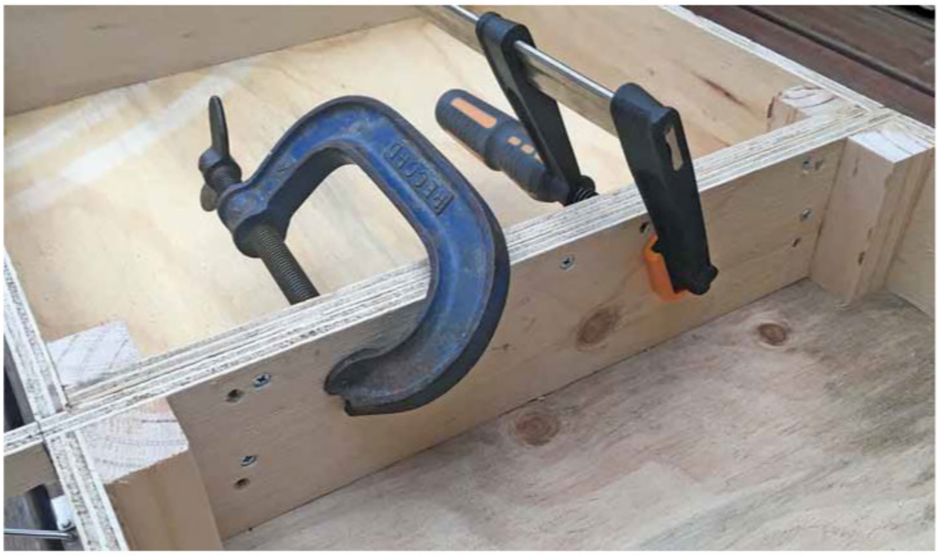


Photo 2.

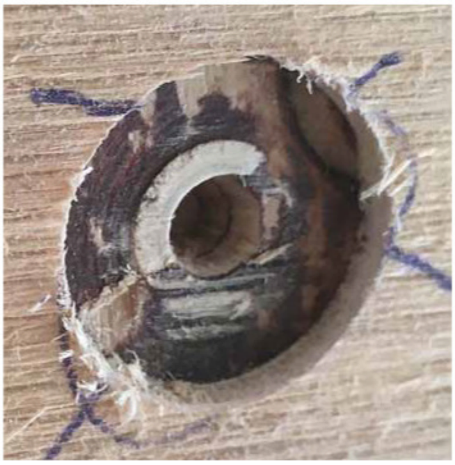


Photo 3.

At each board joint two dowels are used, alternating with a male and female on one side, thus enabling a 'key' at each side.

As per the instructions, the 13mm spade drill bit will provide the final sizing for the dowels. It is recommended that as you clear the material, stop rotation of the drill and pull the drill bit clear in a static condition. This will stop any additional widening of the hole when you extract the drill bit.

The male and female dowels were installed and checked that the flanges were flush to the ends. It's worth noting that the dowels seem to be made of aluminium and are anodised blue. See Photo 4 (Male) and 5 (Female).

As per the instructions, the dowels were installed using ordinary PolyVinyl Acetate (PVA) glue.

The end facing surface of each board is made from 12mm five ply. This material is thick enough to comfortably hold the dowels in place, without problems.

The board joins were 'clipped' back together and installed in their intended position, while the glue dried.

Once the glue cured, the boards were separated and then 'clipped' back in place to check that the dowels were working as intended.

A satisfying slip and clunk noise was heard as the boards were joined together.

Summary

DCCconcepts Alignment Dowels are easy to install and do solve a problem with wear as layouts get older. It's clear that metal will wear less than equivalent wood alternatives and not be subjected to swelling, which I have experienced with wooden dowel alternative designs. For transportation, I would probably make up wooden 'buffers' that would protect the male part of the dowel, and thus stop them being damaged in transit. Additionally, I would not subject these dowels to too much of a vertical load or be used to support one end of another board. Where this type of construction is required, I would build in a lip on the bottom of one board and an indent on the other (I have done this in the past with previous layout board designs).

Given the time taken to install and the results they achieve, the dowels are well worth the investment.

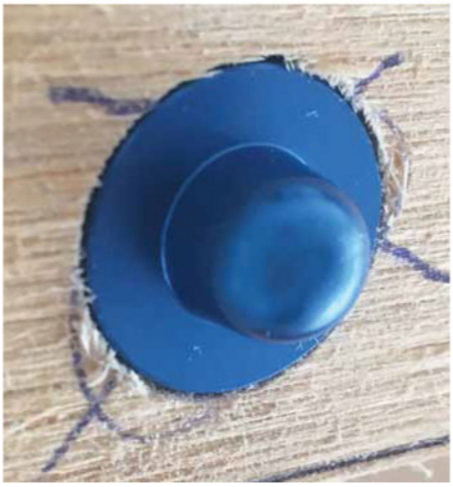


Photo 4.

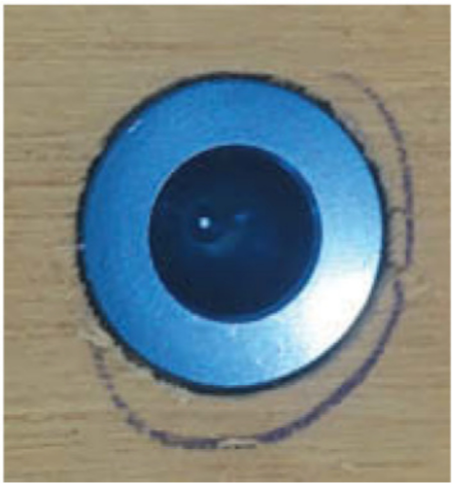


Photo 5.

REVIEWS

The products covered in the Review pages have been supplied or made available by the manufacturer, producer, importer or retailer listed in each product heading. AMRM welcomes access to new product lines for inclusion in the Review pages and requests items be addressed to the Editor at Australian Model Railway Magazine, PO Box 345, Matraville 2036. Readers are reminded that the prices quoted in the reviews are those applicable at the time of going to press. Those using the prices as a guide to purchasing products by mail order should always add extra for postage, or contact the supplier for the additional cost for mail order.

Editor

Queensland Railways HWO End Gates by CGL Models. HO Scale. Price $15.00/pair.
Website: http://www.cglmodels.com.au
Contact: info@cglmodels.com.au
Phone: 0407 559 086.

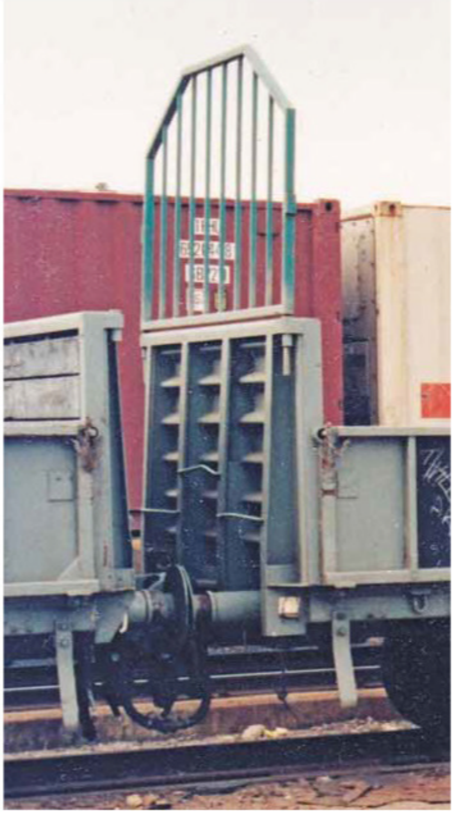
The 1970s brought a whole new era to Queensland Railways (QR). With the locomotive fleet dieselised, attention shifted to new, modern rolling stock. Locally manufactured 'new generation' steel general freight wagons commenced entering service. Steel body wagons on cast-steel bogies were able to run at express freight speeds (80 km/h) and carry maximum loads to 'A' class track standards (15.75t axle load).

The HWO open wagons entered service in 1977–78, being a 50ft. wagon fitted with all side drop doors, six per side, with a part wooden floor, a bulkhead at each end – capable of a payload of 42t and with a maximum speed of 80km/h, were something not seen before. Instructions were issued that these wagons were to be supplied to customers who could use them to their maximum advantage, i.e. full loads on express freight trains. Mostly, this could only be achieved on the North Coast and Mt Isa Lines.

Queensland Railways, being a common carrier, didn't have much work for these wagons. However, freight forwarding and transport companies did. A large number (125 wagons) were allocated to the various companies, some adding their company logo to the sides.

With the doors down, forklifts made short work loading palletised loads into the wagon. Few products made a floor load that reached the maximum carrying capacity of the wagon. With general freight, additional loading was required on top of the floor load – no two loads were the same – loads above the doors needed to be secured. Adding end and side gates similar to semi-trailers of the day solved the issue.

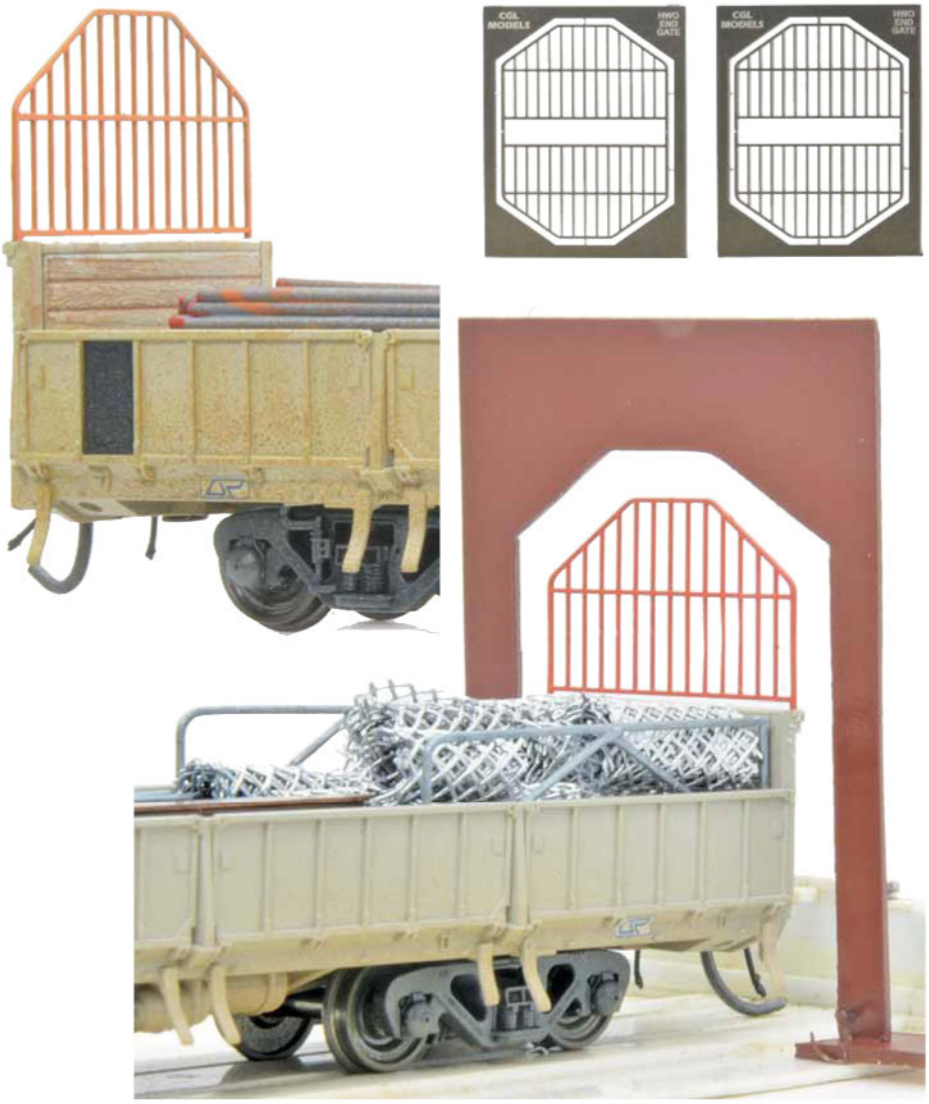
Manufacturers of the wagons made provision in the bulkhead for end gates to drop in. I am not aware of any drawings for the gates. Photos suggest they all were made to a similar pattern conforming to the Loading Gauge; the material used did differ as well as the height and construction methods. Side gates, one per door, were of similar type construction but they were not secured to the door, only sat on top of the doors using 'C' channel. Side gates were latched together with chain or catches to each other and the end gates. Roof bows kept the gates upright once both sides were up and loading was complete. Two tarpaulins were used to protect the load from the weather in transit. One tarp was clipped to the top of the side gates and secured to the bottom of the wagon while, a second tarp covered the top section, being secured to the



bottom of the wagon. In most cases, tarpaulins in company colours were used.

In 1992, HWOs were allocated to Q-Link Bundaberg, Brambles, U.T.O., Hiles Transport, QRX, TTS and Mt Isa Mines. Gates were generally painted in company colours for identification: Brambles (red), U.T.O. (light green), QRX (orange), while others were dark green, silver, Killrust primer.

With the load being covered with tarpaulins, gates were not visible on the forward/outward journey away from coastal city depots. Returning, the wagons were mainly empty or carried empty pallets, drums, cubes, kegs, cylinders etc. End gates remained fixed to the bulkhead, side gates were down on the floor or in with other loading. Some could be found stacked on their sides on top of empty pallets, secured by rope to latching points on the wagon side. It was not uncommon to see a wagon with just one end gate fitted. In the mid to late 1990s, when containers became the preferred method of transporting freight, the HWO wagons came back into QR traffic; most did so without the gates. I am surmising that the gates belonged to the freight forwarder.



The product for review

The two nickel silver frets are packed in a clear plastic bag, making them visible to the purchaser. A colourful card-header folds over the top and forms the back which details the instructions. The instructions are straight forward, explaining the etch is designed to be folded up and either soldered or glued to create one end-gate.

Five easy steps and the model is complete.

1. The end gate etch is removed from the fret. The etch at this stage is very fine and care is required to ensure they are not bent out of shape. I left any fret clean up or filing until after the two sections were fixed together (See Step 3).
2. Fold the two halves together away from the half etched line in the middle.
3. Solder or glue the two halves together. I chose to solder the gates, starting from the bottom. The edge to be soldered was placed between two wooden blocks held tightly. A small amount of flux was applied to the joint and a bead of solder was run along. Sides and then the top were soldered. Once all sides were soldered, a jeweller's file was used to clean up and to make an invisible joint.
4. Paint the gates in your chosen colour. I used SMS acrylic lacquer paints, first using a metal etch before applying colour with a portable air brush. One gate I left unpainted, to model a silver one.
5. Fixing the completed gate to a CGL Models HWO wagon was straight forward. The wagon has detail in the end bulkhead at the fixing point in the form of a raised moulding. The moulding was removed with a sharp modelling knife. Using the gate end as a guide, a 0.5mm drill bit was used to make a secure point for the gate. I found the gate a tight fit, so I used the drill to ream out the hole by moving it up and down in the hole a few times. The instructions suggest a drop of super-glue to secure the gate to the wagon. I was happy with a press fit, which allows me to remove the gate if so desired at a later date.

The etches are very fine, 0.2mm thick and when folded 0.4mm wide. They were clean with very minimal clean-up required, mainly filing the securing tabs down flat to the sides. Assembly was straight forward and easy, which only required a few minutes for each. Upon completion they are quite robust. When fixed to the wagon, the gate fits within the loading gauge outline and looks the same as the prototype photos.

Overall, the gates are a magic little item of enhancement for your HWO wagons. It allows the modeller to add additional prototype detail. It's the small detail that takes an item of rolling stock up to the next level in detail. They will make a great addition to the range of accessories for the QR modeller looking to raise the standard of his rolling stock and layout.

Arthur Hayes

Recollections (DVD) published by the Modelling the Railways of South Australia Convention (2022). http://www.mrsac.com

Recollections is a set of articles from over forty years about the Adelaide Branch Line Operators (ABLO), originally compiled in a 100 page book by Kevin Kavanagh in 2007. This DVD includes all that plus additional material from articles in 2013, 2015 and 2021. The DVD is therefore a more comprehensive account of the ABLO group, its members, layouts and philosophy. It is also an historical record of some excellent and far-sighted railway modellers, some of whom (including Kevin Kavanagh) are no longer with us.

The DVD contains two files. There is a pdf of the 165 pages of text and photos, plus a mp4 video of Super 8 footage with commentary about the early years of the ABLO group.

The pdf is exceptionally well presented with clear text and photos. The photos in particular, are reproduced to a fine quality (both colour and black and white) and showcase the layouts, locomotives, rolling stock, and South Australian buildings superbly. The photos on the DVD give much more ‘spark’ than in the book. Layout and station diagrams are also well represented from the book and from the additional articles.

The format features a series of articles from different sources (e.g. AMRM and Continental Modeller), written by different members of the ABLO group. The articles are reproduced as they appeared in the original book but, where additional articles are included, they maintain the look and feel of the source (for example, the articles from 2013 and 2015 from Continental Modeller). This by no way detracts from the quality of the publication.

The DVD starts with a concise but useful introduction. The articles follow the same order as in the book: Eight ABLO members reflect on their ABLO experiences. Each of the members makes insightful and personal contributions about their involvement in ABLO, which is like reading an oral history, something that becomes more precious as time passes. I found these contributions to be as fascinating as the next section, on model railway layouts.

There are fourteen articles devoted to layouts, including the *Moping Branch*, *Nevada Central*, *North Western Railway*, *Belair/Hawthorn Division*, *Willunga Branch*, and the two-part *Mallee Lines* by Les Fordham. Some layouts are featured more than once, such as Kevin Kavanagh’s *Huntingdale and Grange Railway,* where there is slight repetition due to the different sources of the articles. Again, this does not detract from the wealth of valuable information and images from these articles. The *Moping Branch* has always been a personal favourite and it was good to read about this fantastic layout again. All the articles are jam-packed with important information about these model railway layouts and their operation, even though most of the layouts were built 30–40 years ago. As such, the book and DVD represent important historical documentation of these wonderful layouts, some of which were pioneering endeavours of Australian railway modelling.

The third section of the DVD features articles on operation, the first two being on ABLO card operations. The ABLO card operations articles were published in AMRM in 1977 and were the first, I believe, published Australian articles on serious model railway operations. Interestingly, about the same time over in the USA, Allen McClelland and his *Virginian & Ohio* series in *Railroad Model Craftsman* introduced serious model railway operations to the Americans and the rest of the world. Also, both ABLO and McClleland introduced similar notions about a railway being part of something bigger than what was being modelled. ABLO called this being part of the broader railway network and McClelland’s ‘beyond the basement’ as being part of a national transportation system. ABLO’s contribution in this area cannot be understated.

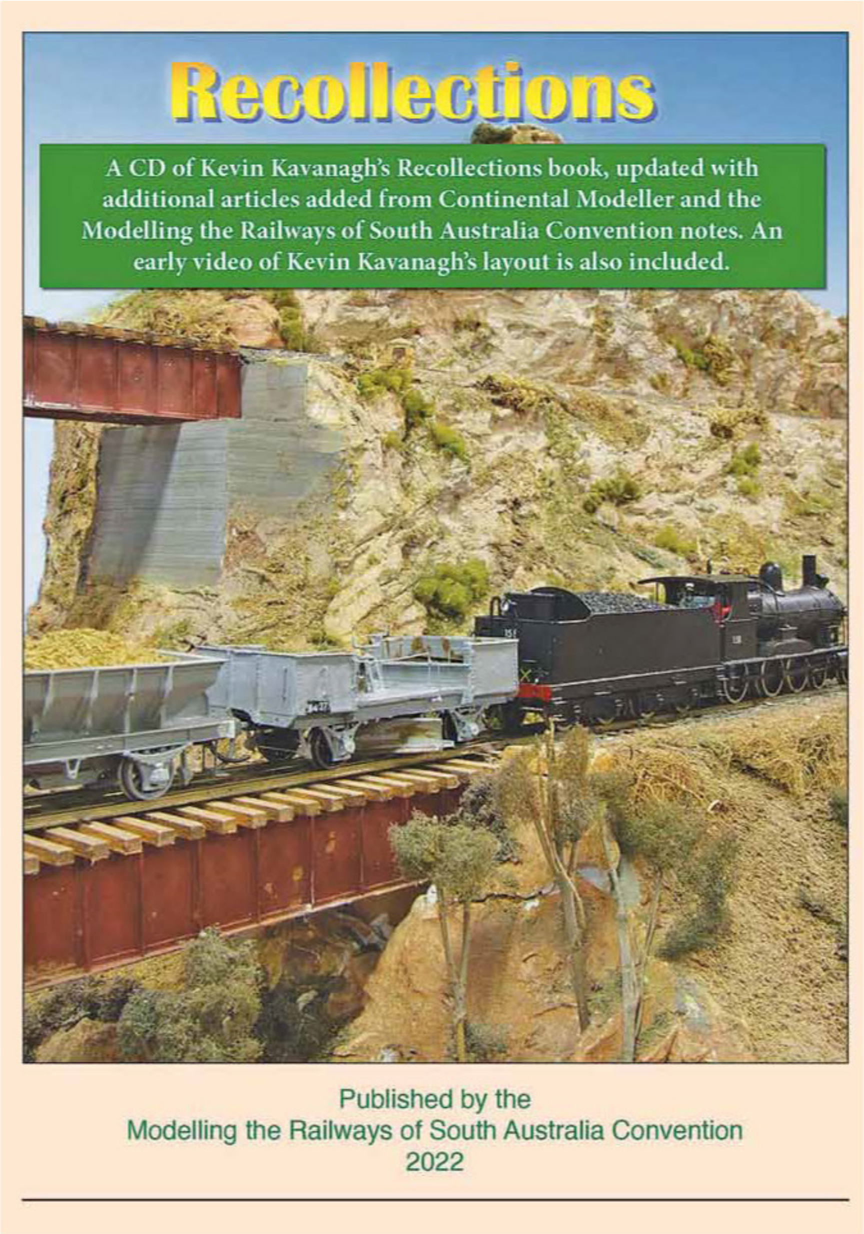
The DVD finishes with acknowledgements and a list of ABLO members over time.

The mp4 is based on Super 8 movies made by ABLO member Stan Filsell (*Nevada Central*) in the early years of ABLO. The Super 8 movies were converted to VHS, and later to mp4 format, which is included on the DVD. This background information was not included and is my only complaint. Whilst the quality of the original source is not up to today’s standards, the videos are an interesting insight into the early days of the ABLO group.

I thoroughly recommend this DVD if you have any interest in model railways, irrespective of prototype or scale preference. Ross Hurley and the team are to be congratulated for updating Kevin Kavanagh’s book compilation onto a high-quality DVD. The inclusion of historical model railway footage as a supplement is a very nice touch.

The DVD is available from Adelaide hobby shops and the Modelling the Railways of South Australia Convention for $30.00 a copy.

Brad Hinton



Recollections

A CD of Kevin Kavanagh’s Recollections book, updated with additional articles added from Continental Modeller and the Modelling the Railways of South Australia Convention notes. An early video of Kevin Kavanagh’s layout is also included.

Published by the
Modelling the Railways of South Australia Convention
2022

Mark Jesser has released 20ft corrugated side Linfox containers in N scale. Currently these containers are available through his website: https://markjesser.com.au/nscale

Cooee Classics has released a selection of 1957 to 1959 Bedford bus in four different liveries, including Duffy's, Grenda's (shown) and two school bus versions one for Trinity Grammar and a generic version in yellow.

Roundhouse Models has released three different packs of eight steel sheet coils. These are unpainted 3D printed models (painted version shown) the HO scale dimensions are as installed vertically in a coil cradle, as follows:

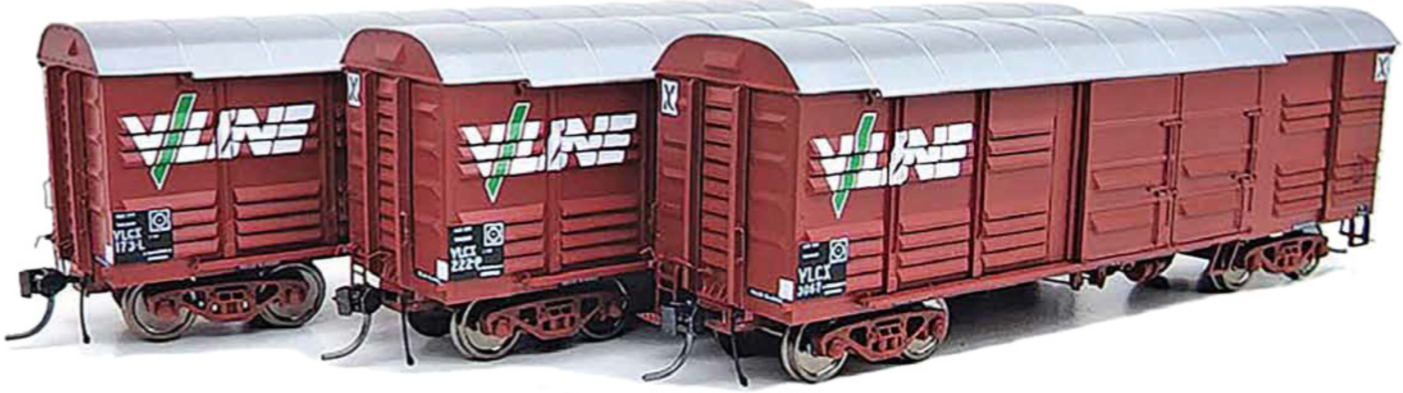
Pack A 12mm W x18mm T
Pack B 15mm W x18mm T
Pack C 15mm W x20mm T

Auscision Models has released a re-run of their VicRail GH four-wheel grain wagons, in two and three hatch versions (shown), available in six wagon packs.

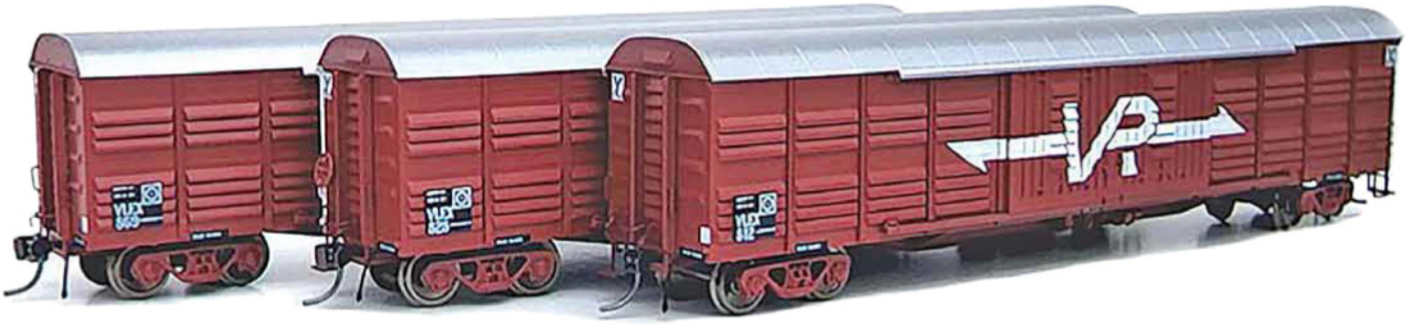
Auscision Models has released a re-run of their Victorian Railways (VR) IZ four-wheel open wagons, in VR brown and VR wagon red livery (shown). Available in six wagon packs.

◀ Auscision Models has released OneRail AHAH coal hopper wagons in orange and silver or weathered brown livery. Available in four wagon packs.

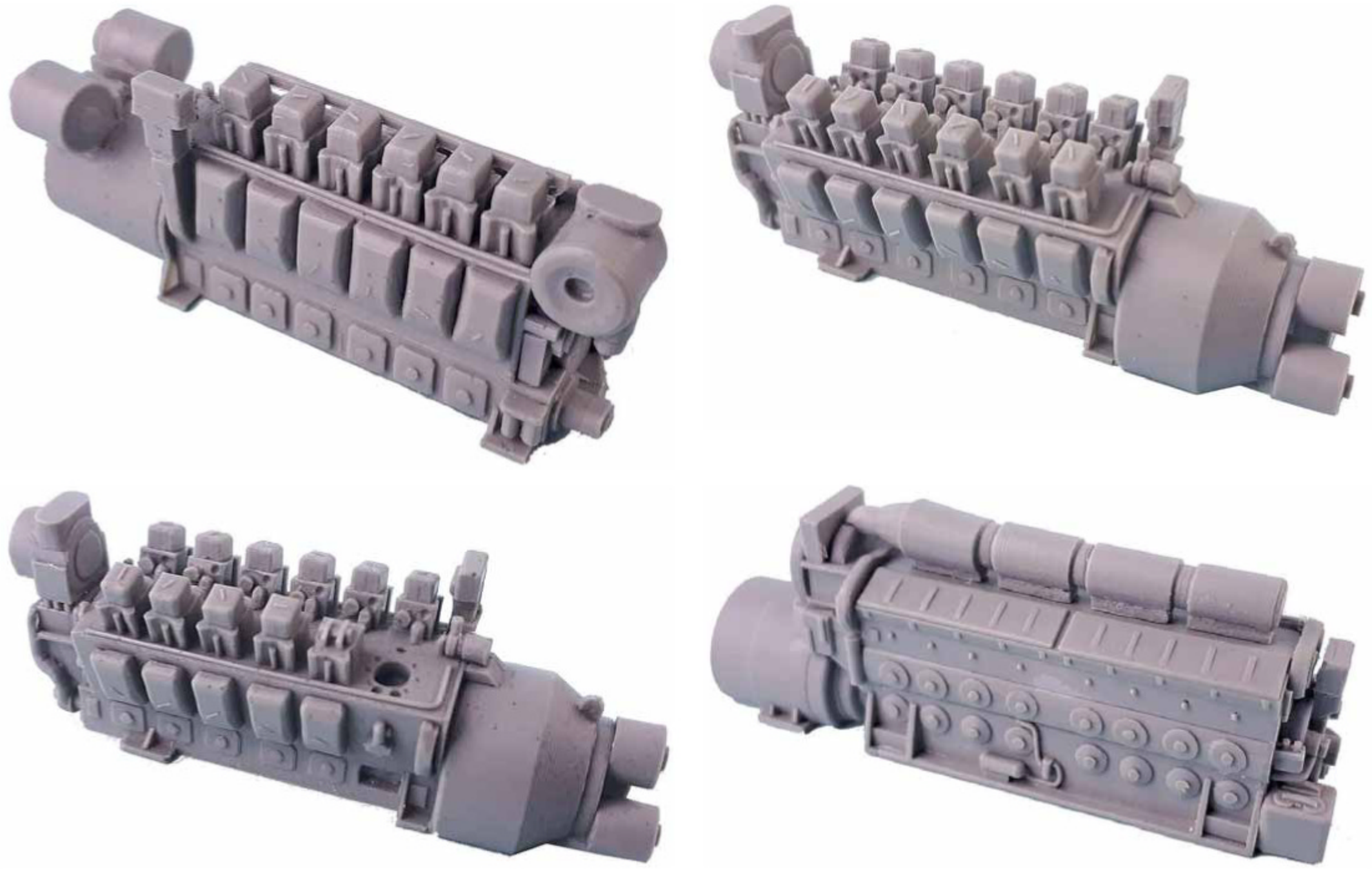
▶ Auscision Models has released Pacific National NHHH coal hopper wagons in light blue (shown) and blue and silver four wagon mixed pack.



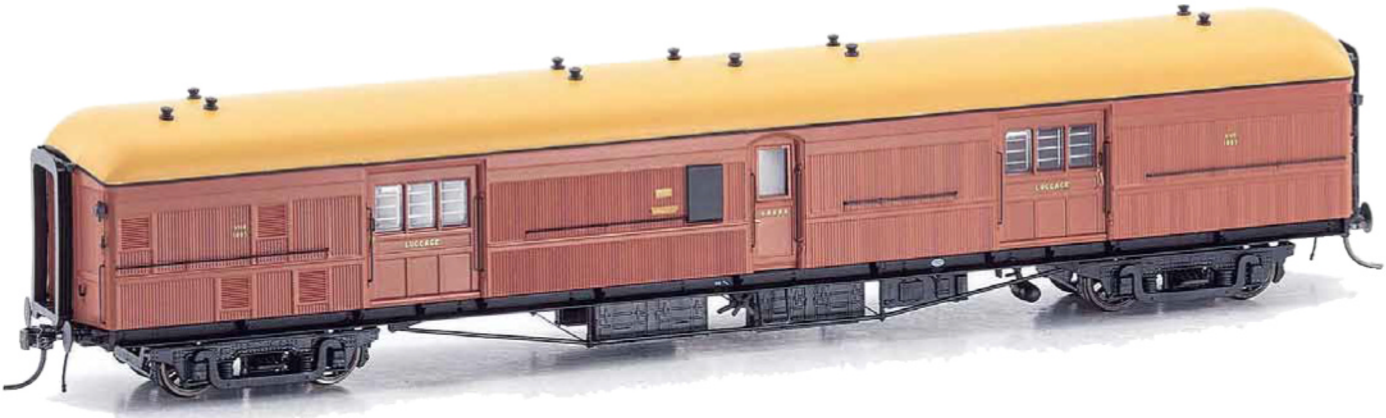
On Track Models has released a re-run of their Victorian Railways (VR) VLX VLCX VLVX RLCX in VR with small logo, VR with large logo, V/Line (shown) and Freight Australia green livery. Available in three wagon packs.

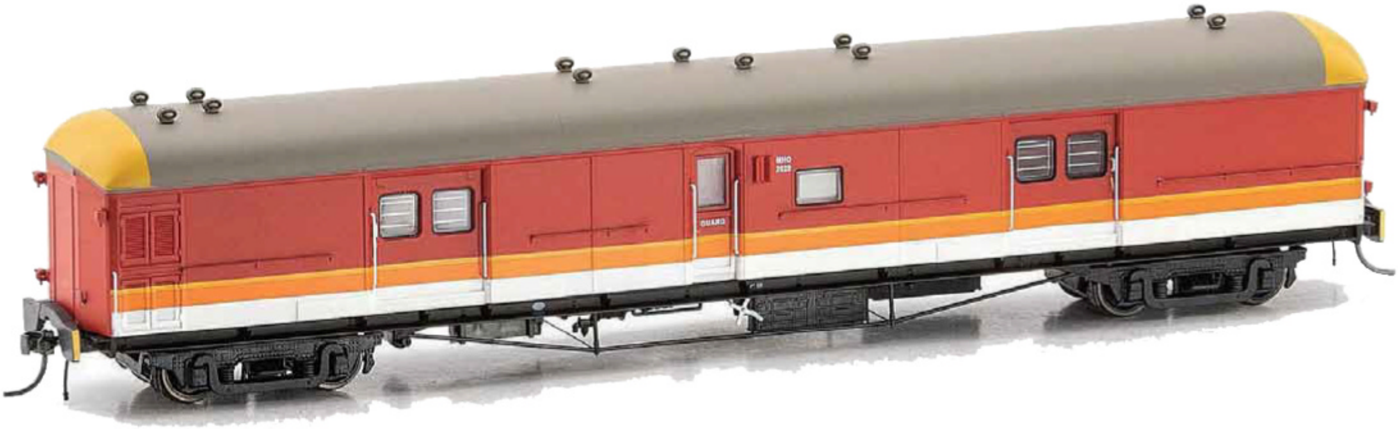


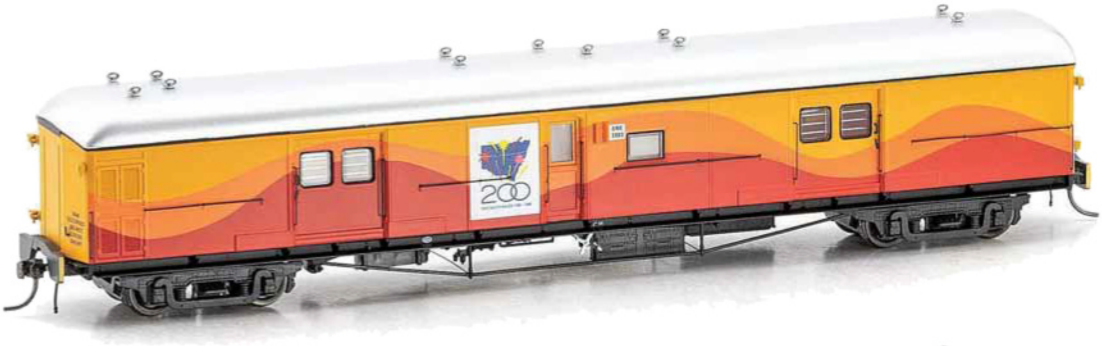
On Track Models has released a re-run of their VR VSX VLEX VLEY RLEX and VLRX in VR with large logo (shown), V/Line and Freight Australia green livery. Available in three wagon packs.



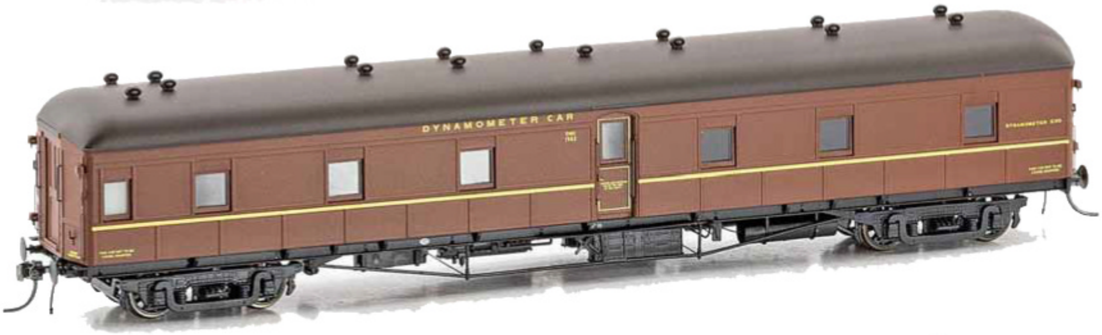
Stephen Johnston Models has released under their 'Peter Ford series' several prime movers. Top left is an ALCO 251 6cyl prime mover kit, top right is an ALCO 251 12cyl prime mover kit, bottom left is an ALCO 251 12cyl prime mover 'under repair' kit and bottom right is an EMD 645 V16 prime mover kit.


LUGGAGE
LUGGAGE

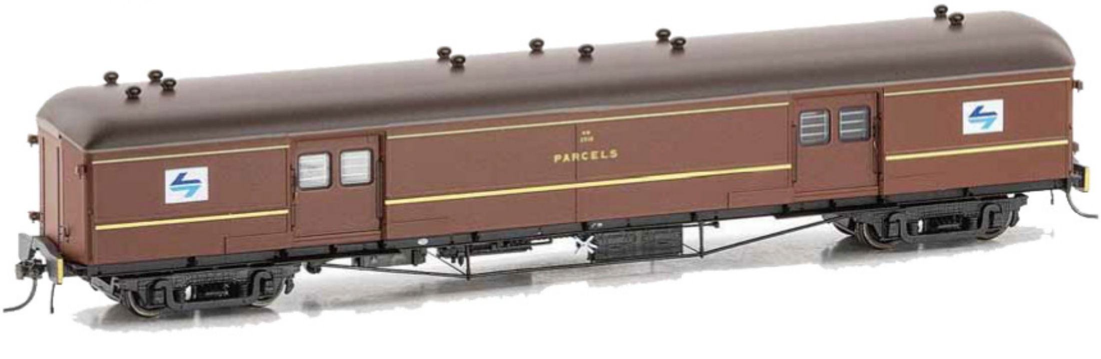




SDS Models has released their SRE 2603 brakevan in Bi-centennial livery, available in single car packs


DYNAMOMETER CAR

SDS Models has released their NSWGR DMC 1902 Dynamometer car in 1940s 1950s Venetian Red/Russet and 1960-1970s Indian Red livery. Available in single car packs.



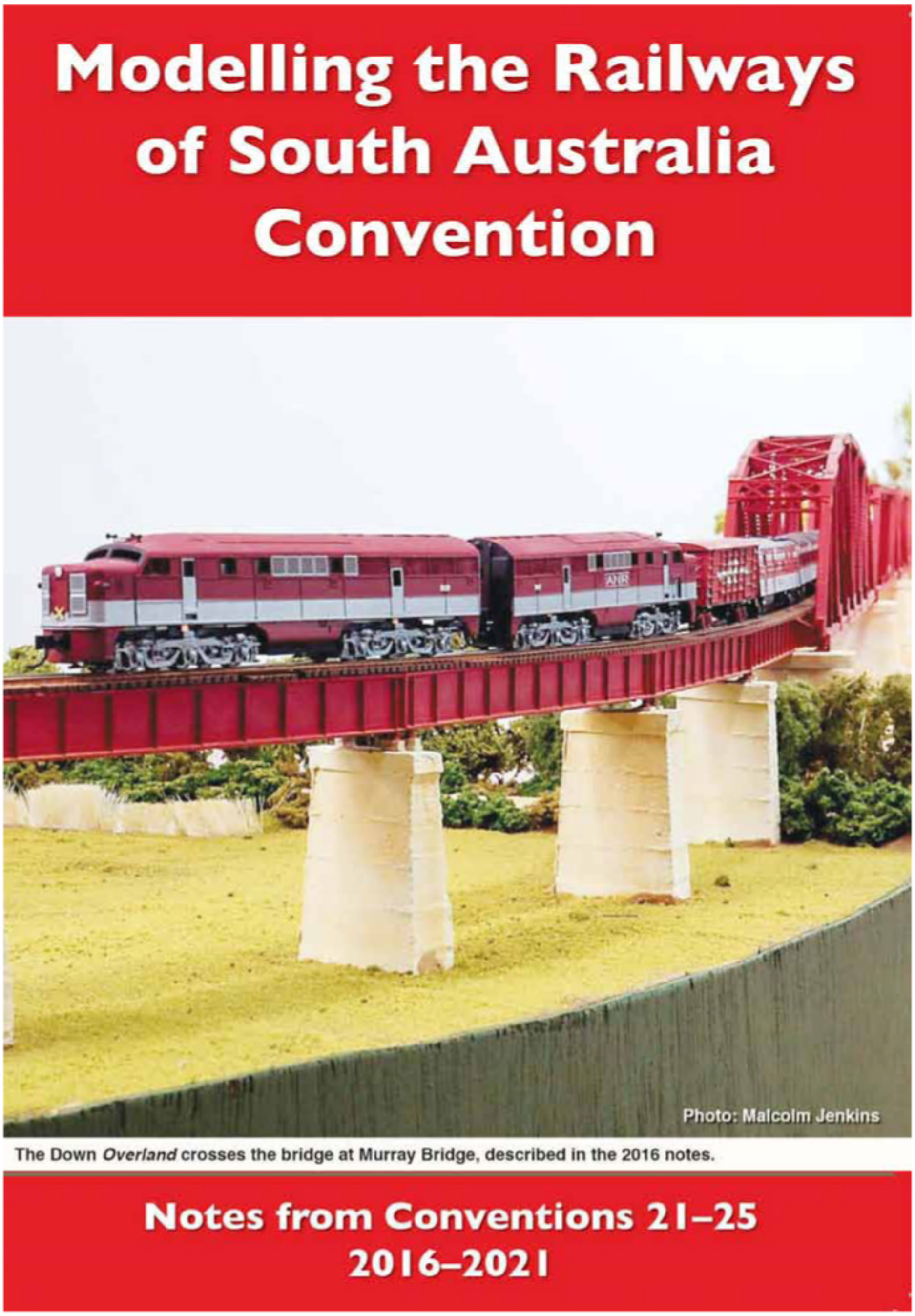
SDS Models has released their NSWGR KB parcels van in 1970s Indian Red livery and Candy livery. Available in single car packs and twin packs with an MHO brake van.

◀ *SDS Models has released their New South Wales Government Railways (NSWGR) VHO brake vans in 1920s Varnish (shown) 1940s-1950s Venetian Red/Russet, 1950s-1960 Indian Red, available in single van packs.*

◀ *SDS Models has released their NSWGR MHO/MHX brake vans in 1930s Tuscan with full lining, 1940s-1950s Venetian Red/Russet, 1950s-1960 Indian Red, 1970s Indian Red, 1980s Candy along with a AAH in late 1970s light purple brown livery. Available in single van packs, and twin packs as applicable with a KB parcels van.*

▶ *The Modelling the Railways of South Australia Convention notes 21 to 25 (years 2016 to 2021) is now available from Adelaide hobby shops and at the next Convention. Please note because of Covid there was no convention in 2020, Notes 1 to 10 are available on one CD, and 11 to 15 and 16 to 20 are also available.*

▼ *An extract of some of the articles available on The Modelling the Railways of South Australia Convention notes 21 to 25 (years 2016 to 2021).*

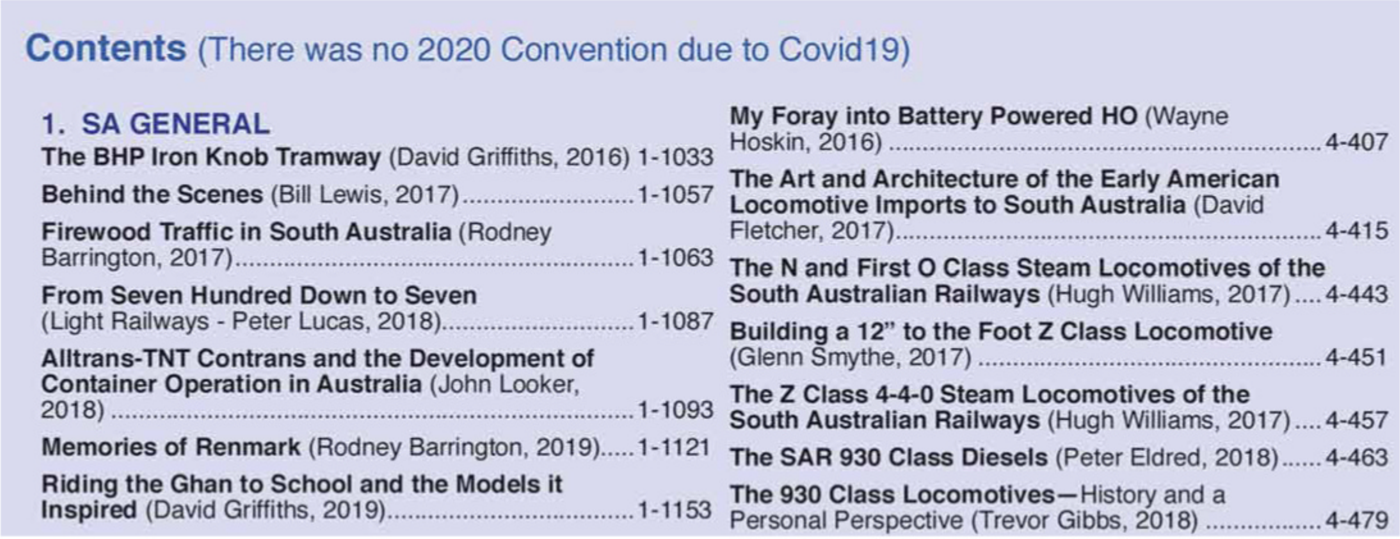


Modelling the Railways
of South Australia
Convention

Photo: Malcolm Jenkins

The Down *Overland* crosses the bridge at Murray Bridge, described in the 2016 notes.

Notes from Conventions 21–25
2016–2021



Contents (There was no 2020 Convention due to Covid19)

1. SA GENERAL

The BHP Iron Knob Tramway (David Griffiths, 2016) 1-1033

Behind the Scenes (Bill Lewis, 2017) 1-1057

Firewood Traffic in South Australia (Rodney Barrington, 2017) 1-1063

From Seven Hundred Down to Seven (Light Railways - Peter Lucas, 2018) 1-1087

Alltrans-TNT Contrans and the Development of Container Operation in Australia (John Looker, 2018) 1-1093

Memories of Renmark (Rodney Barrington, 2019) 1-1121

Riding the Ghan to School and the Models it Inspired (David Griffiths, 2019) 1-1153

My Foray into Battery Powered HO (Wayne Hoskin, 2016) 4-407

The Art and Architecture of the Early American Locomotive Imports to South Australia (David Fletcher, 2017) 4-415

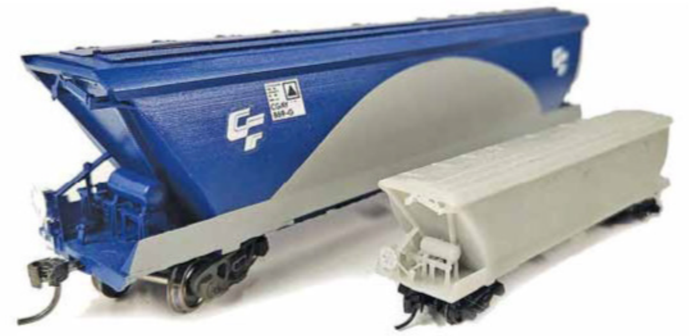
The N and First O Class Steam Locomotives of the South Australian Railways (Hugh Williams, 2017) 4-443

Building a 12" to the Foot Z Class Locomotive (Glenn Smythe, 2017) 4-451

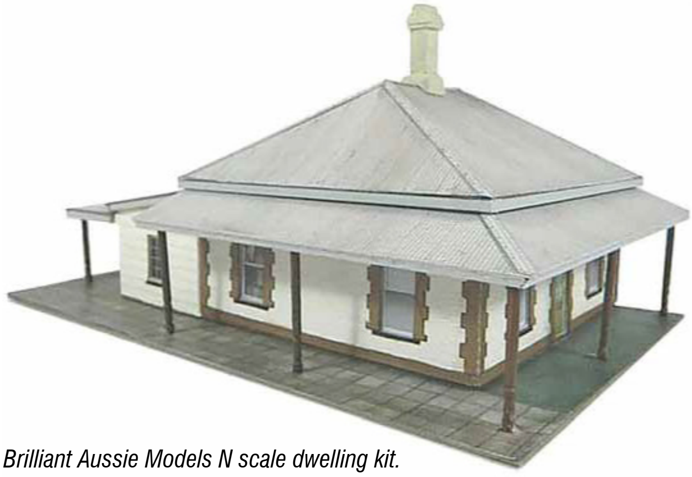
The Z Class 4-4-0 Steam Locomotives of the South Australian Railways (Hugh Williams, 2017) 4-457

The SAR 930 Class Diesels (Peter Eldred, 2018) 4-463

The 930 Class Locomotives—History and a Personal Perspective (Trevor Gibbs, 2018) 4-479

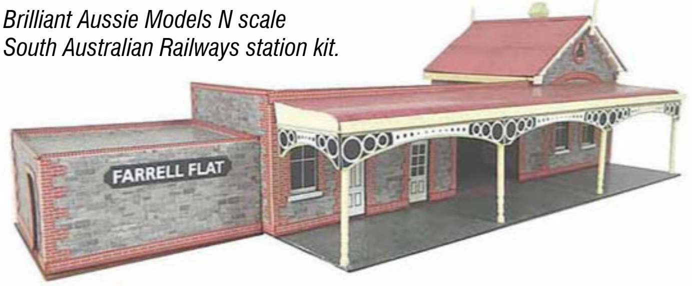


Kandu Workshops pilot model of their N scale CGAY grain hopper wagon, HO scale version shown left for comparison.



Brilliant Aussie Models N scale dwelling kit.

Brilliant Aussie Models N scale South Australian Railways station kit.



N Scale

Kandu Workshop

The first trial print of their N Scale CGAY grain hopper wagon kit is complete. This model is a single piece 3D print.

Brilliant Aussie Models

Brilliant Aussie Models (BAM) have developed a range of Australian N Scale building kits. These kits cover from the early Federation years (1860s) through to the early 1970s.

Their range of kits will include:

- Traditional Australian dwellings in stone, brick, stucco and weatherboard
- Queensland Railways (QR) and South Australian Railways (SAR) railway stations and goods sheds
- Commercial shops, hotels, service stations and community buildings
- Low relief shops
- Farm sheds, transport company sheds, utility sheds and grain silos (four and eight cells)
- Australian scratch building sheets in weatherboard, stone and brick
- Australian timber and corrugated iron fencing, with or without graffiti.
- Basic starter kits
- Shipping containers and truck bodies

A full catalogue is available via email: bamnscale@gmail.com, quoting reference number ‘FBANS21319’.

HO Scale

Scale Model Reproductions (SMR)

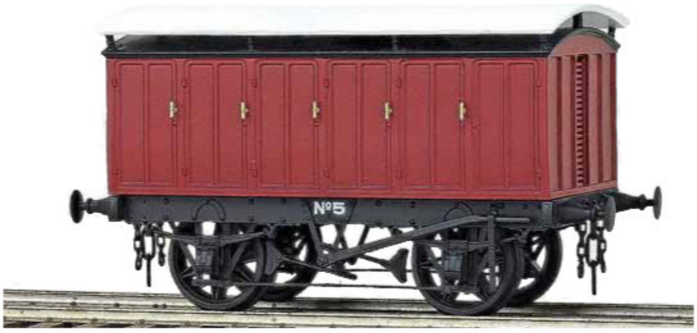
SMR are in the development phase of producing Holden HJ utes and panel vans. These are 3D printed models.

Stephen Johnston Models have acquired the patterns made by the late Peter Ford for the NSW outline kits he produced under the Far North Hobbies label. Over time they plan to release small batches of many of the kits Peter produced.

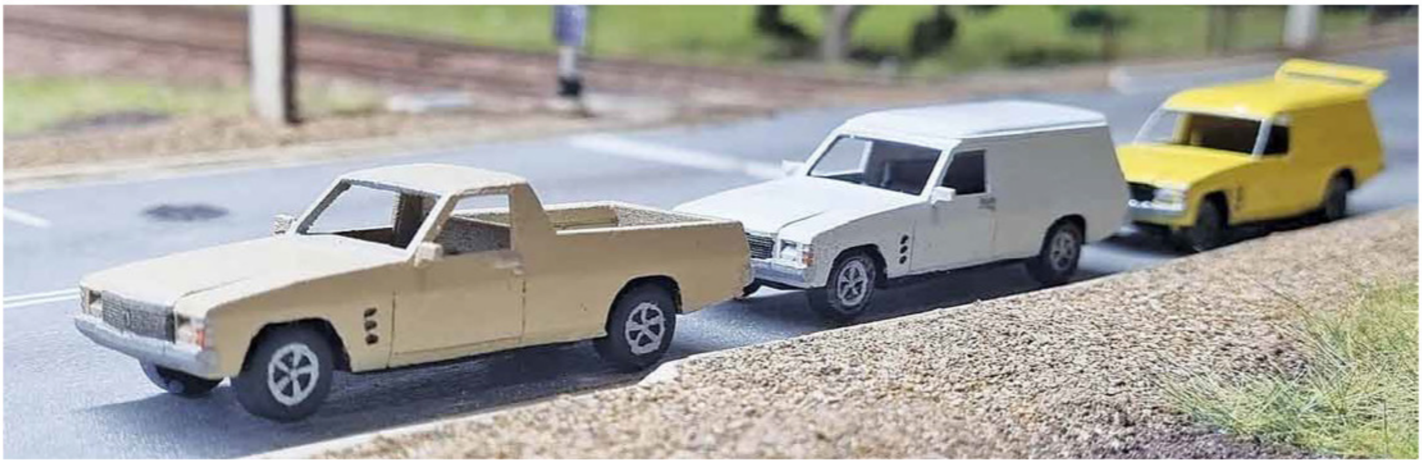
This will involve making new etched nickel silver chassis for those kits that had cast brass solebars and axle box assemblies. New replacement bogies for those made from cast brass will be produced where suitable alternatives are not readily available. Items made from Peter’s patterns will be sold under the Stephen Johnson Models brand, but with a pale blue label marked ‘Peter Ford series’

They also have in development a NSWGR four-wheel KE Hearse wagon kit.

Continued on page 67



▶ *Stephen Johnston Models NSWGR four-wheel KE Hearse wagon kit.*



Scale Model Reproductions Holden HJ ute and panel vans.

Auscision Models

Auscision has announced that the tooling samples have been received for their new project, the Freight Rail/FreightCorp/Pacific National NPHH cement hopper wagons r-t-r.

These models will have a high level of detail with every pipe being modelled.

Features include: Scale sized metal knuckle couplers and blackened metal disc wheels as standard, see-through etched metal roof walks, scale size air hoses, detailed plastic main body and chassis, metal and plastic handrails, along with accurate weight for better rolling performance.

Models in this production run include the 'as delivered' body version. Later versions will include: air tanks fitted at one end, mud deflectors on the chassis, ground operated roof hatches, blanked off ladders and extra roof piping.

Five different liveries, including Freight Rail, FreightCorp and FreightCorp with Australian Cement logos and Pacific National.

Auscision has also received the State Rail Authority of New South Wales (SRA of NSW) PHA Power Van assembled painted pilot models. Only a couple of corrections to be made before r-t-r production takes place in 2023.

Further announcements include a re-run of their r-t-r four car V Set Interurban Passenger Electric Multiple Units.

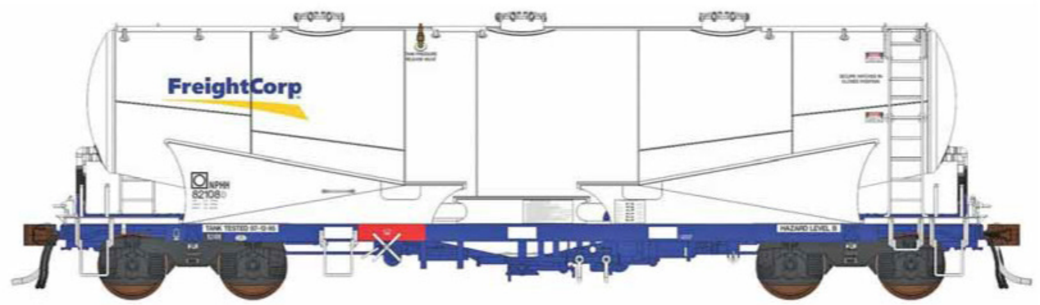
Features are, as applicable: DCC sound equipped four car V Sets, factory fitted with ESU Loksound 5 decoder in the powered driving car and Loksound 5 FX in the unpowered driving car, along with Auscision Vandersound speakers in both driving cars. Sound files have been recorded on both Camshaft and Chopper V Sets and will be applied as appropriate to the model.

Equipped with operating LED headlights, red/white marker lights and blue guard's lights, plus ditch lights on some versions.

Five new versions are included with this re-run:

- TfNSW TrainLink Chopper set
- CityRail CityDecker with destination boards
- CityRail Intercity and TfNSW TrainLink, also with blanked off destination boards.

Unpainted pilot r-t-r model of the NPHH cement hopper wagon.



FreightCorp artwork for the NPHH cement hopper wagon.

PHA Power van painted pilot r-t-r model. This model will be available in State Rail Authority (SRA) with Candy L7 (shown), NSW Rail Museum, CountryLink and CityRail liveries.

Painted pilot r-t-r model V set in CityRail livery.

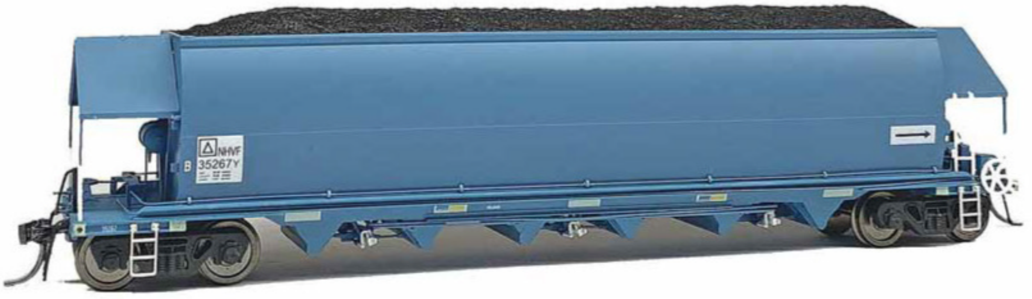
Painted pilot r-t-r model V set in TfNSW TrainLink livery.

IDR Models

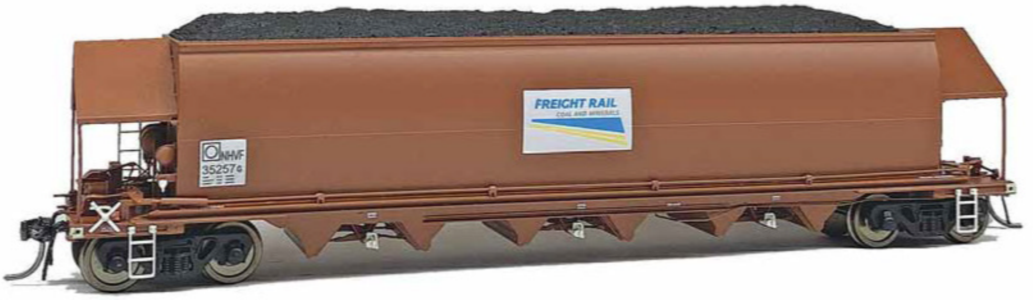
The DERMs and MT are both selling well, with many versions either sold out or down to the last few.

The PTC CHS r-t-r coal hopper wagons are due to be finished by the end of February, some versions are already completed.

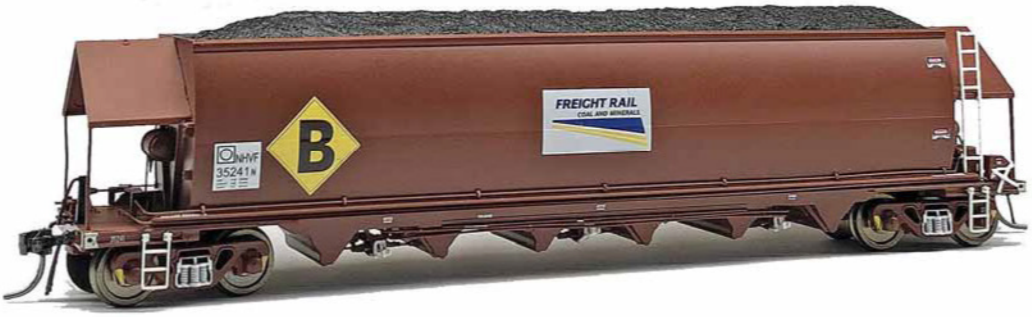
IDR Models expect the CHS coal hopper wagons to arrive around March 2023. Pre-orders will remain open until the models arrive in Australia.



IDR Models painted pilot r-t-r model of their Pacific National liveried NHVF coal hopper wagon.



IDR Models painted pilot r-t-r model of their Freight Rail liveried NHVF coal hopper wagon.

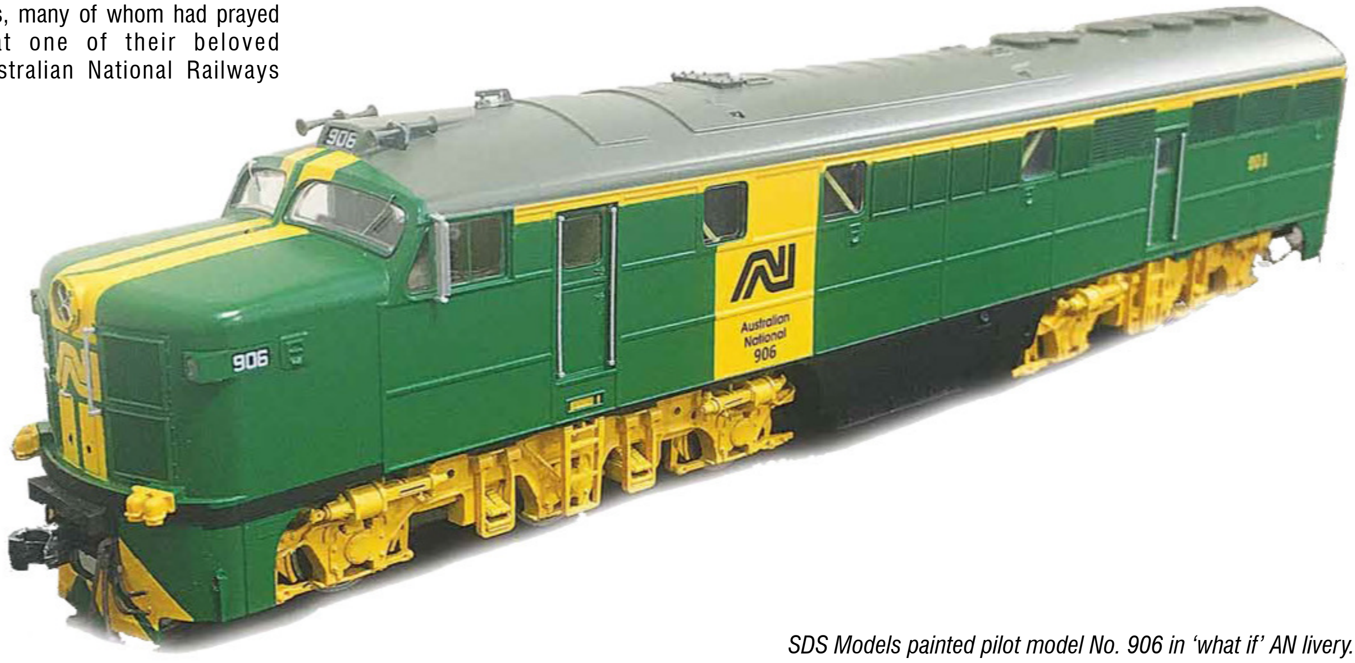


IDR Models painted pilot r-t-r model of their Freight Rail liveried with B diamond NHVF coal hopper wagon.

SDS Models

At the instance of several Australian National (AN) modellers, many of whom had prayed that one of their beloved Australian National Railways (ANR) 900 class locomotives had made it into AN's new corporate green and gold livery. SDS Models has developed two fantasy 'what if' liveries:

- 906 with forward yellow panel



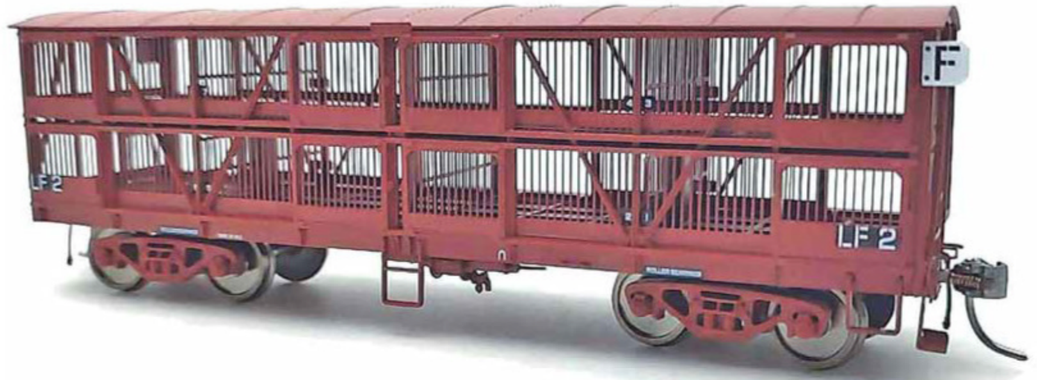
SDS Models painted pilot model No. 906 in 'what if' AN livery.

Ixion Model Railways

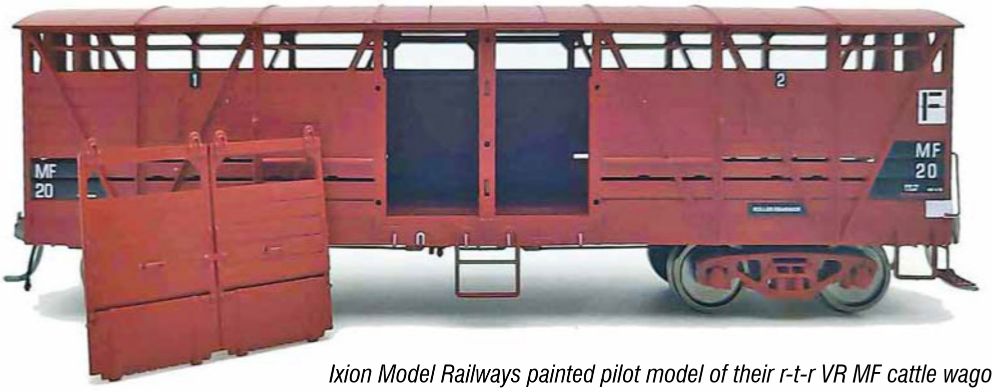
Ixion has received and approved the pilot models of their r-t-r Victorian Railways (VR) LF/VSAY sheep wagons and MF/VSBY cattle wagons. Production is due to commence after Chinese New Year and scheduled to be completed by April.

These wagons will come with separate doors for one side included in the box, enabling the fitting of stock (cattle or sheep) if desired. These doors are designed to be glued in place using alignment guides. They will be available in single and three-packs, with either LF or VSAY coding on the sheep wagons, and MF or VSBY coding for the cattle wagons.

The re-run of the r-t-r VR J Class 2-8-0 steam locomotive has been delayed by the unavailability of the required motors, due to the supplier relocating their factory, resulting in order backlogs.



Ixion Model Railways painted pilot model of their r-t-r VR LF sheep wagon.



Ixion Model Railways painted pilot model of their r-t-r VR MF cattle wagon.

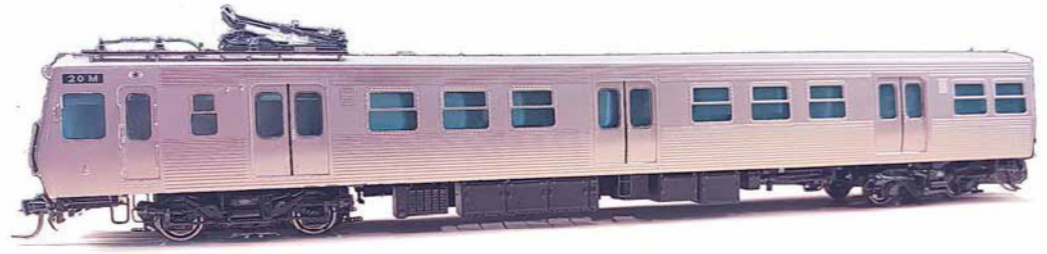
TrainBuilder

Trainbuilder has received the pilot model for their VicRail Hitachi suburban Electric Multiple Units (EMU) for delivery in 2023.

Corrections

Comment: ‘One off’s correction regarding the AQUZ container wagon. This wagon was made from a standard gauge SGBZ four-wheel open wagon and not a OBf. Thanks to Michael Heath for the information, it’s good to see modellers reading the comment section so diligently!

AMRM News: Auscision Models Freightliner locomotive road numbers should be CF4407 and CF4408.



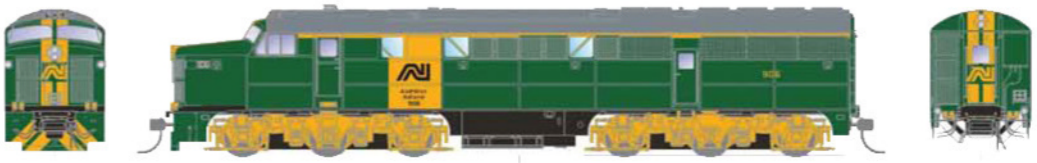
Trainbuilder’s pilot model of their VicRail Hitachi suburban EMUs for delivery in 2023.

and green B end, with yellow stripes and AN symbol.

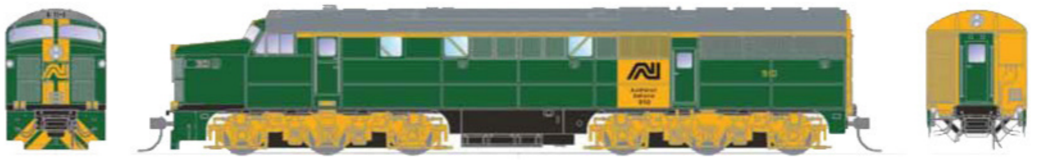
- 910 with aft yellow panel and full yellow B end.

These ‘what if’ liveries will arrive shortly after the first shipment of South Australian Railways (SAR) and ANR 900s and will be available at the Adelaide Model Railway Exhibition in June 2023.

Production slots following the SAR ANR 900 class locomotives, will be the next series of 81 class locomotives. The QR 1460/1502 locomotives will follow in about three months’ time.



SDS Models digital rendering of the ‘what if’ AN livery design No. 906.



SDS Models digital rendering of the ‘what if’ AN livery design No. 910.

Diary

EXHIBITIONS & EXPOS

BUNDAERG – QLD. March 25-26, 2023 Bundaberg Model Train & Hobby Expo. 2023. Bundaberg Multiplex Sports & Convention Centre, 1 Civic Avenue, Bundaberg West. 9am–5pm (Sat), 9am–4pm (Sun).
Graham Nicholson 0407 559 086. graham@queenslandscalemodels.com.au

KALEEN – ACT. March 25-26, 2023. 34th Canberra Model Railway Expo, UC High School 104 Baldwin Drive Kaleen. 9am–5pm (Sat), 9am–3pm (Sun). Adults $20, School age and under free, Concession $10, Family (2 adults plus children) $30.
Contact: Andrew (02) 6231 9799. Website: www.cmrci.info

DIAMOND CREEK – VIC. April 8-9, 2023. Yarra Valley Model Railway Model Train Exhibition. Community Bank Stadium, 129 Main Rd Diamond Creek 3089. 9.30am–5pm (Sat), 10am–4pm (Sun). Adults $15, Children $5, Families $30. Tickets only available at the door.

BRISBANE – QLD. May 6-7, 2023. AMRA Qld. Inc. Annual Brisbane Model Train Show 2023. Exhibition Building, Brisbane Showgrounds, 601 Gregory Terrace, Bowen Hills (cnr. Costin Street). Adults $17.00, Concession $12.00. Children under 16 free if accompanied by an adult. Tickets only available at the door. www.brisbanemodeltrainshow.com.au

ROSEHILL – NSW. May 6-7, 2023. Great Train Show, Rosehill Gardens Racecourse. Entry from James Ruse Drive or Grand Avenue, Rosehill. 9am–5pm (Sat), 9am–4pm (Sun). Mike 0408 817 554.
contact@greattrainshow.com.au www.greattrainshow.com.au

LAVINGTON/ALBURY – NSW. May, 20-21 2023. Murray Railway Modellers Annual Model Train Show, Mirambeena Community Centre, 19 Martha Mews, Lavington/Albury. 9am–5pm (Sat), 10am–4pm (Sun). Grant 0417 538 700.
grant.myers56@gmail.com www.murrayrailwaymodellers.com.au

CLAREMONT – WA. June 3-5, 2023 (WA long weekend). AMRA WA Model Railway Exhibition, Royal Agricultural Society's grounds, Claremont. Further details and expression of interest can be obtained from Exhibition Co-ordinator at
exhibition@amrawa.asn.au.

BALLARAT – VIC. June 10-12 2023. Ballarat & District Model Railway Club Inc Exhibition at new venue Woodsman Hill Recreation Centre, Fussell Street, East Ballarat. Saturday and Sunday 10am–5 pm, Monday 10am–4pm.
John McClure Email jkmcclure8@bigpond.com
Phone (03) 5335 7765 or 0497 002 334.

GLEN WAVERLEY – VIC. June 10-12, 2023. Waverley Model Railway Club Annual Exhibition, Brandon Park Community Centre, 649 Ferntree Gully Road, Glen Waverley. 10am–6pm (Sat), 10am–5pm (Sun), 10am–4pm (Mon). Adults $13, Children $6, Family $32. exhibitions@waverleymrc.org.au

STAWELL – VIC. July 8-9, 2023. Grampian Model Railroaders Inc. SES Hall, Sloane St, Stawell. 9.30am–5pm (Sat) & 10am–4pm (Sun).
Stuart 0438 545 233. www.gmrinc.org.au

WARRNAMBOOL – VIC. January 13-14, 2024. Warrnambool Model Railway Exhibition, St. Joseph's Primary School Hall, Botanic Road Warrnambool. 10am–5 pm (Sat), 10am–4pm (Sun). Enquiries: 0421 159 206.

SEMINARS & CONVENTIONS

EPPING – NSW. July 8, 2023. 10am–2.30pm. SCMRA and EMRCI. Epping Creative Centre, Dence Park, 26 Stanley Rd., Epping, NSW. All welcome. Free entry. Sausage sizzle lunch. Getting Started in Model Railways Clinic at 11am. Trevor 0419 492 553 for details or to confirm attendance.

ADELAIDE – SA. September 2, 2023. *Modelling the Railways of South Australia 27*, at the Flinders Medical Centre lecture theatres, Bedford Park. Registration forms: MRSAC, PO Box 356, Parkholm SA 5043 or selected hobby shops. Registration at 8.30 for a 9am start (Sat). convention@mrsac.com www.mrsac.com

ROSEHILL – NSW. September, 29–October, 2 2023 NMRA Australasian Region National Convention. *Rails@Rosehill*, Rydges Hotel, 116-118 James Ruse Dr, Rosehill. Guest speakers, clinics, workshops, hands on layouts, traders, layout tours, partner program and much more! John 0411 400 049. host@rosehill.org.au www.nmra.org.au

OPEN DAYS

ZILLMERE – QLD. April 15, July 15 & October 21 2023. AMRA Qld. Inc. premises, 20A Murphy Road Zillmere. Turn right at the Handford Road lights just before the rail overpass.

EPPING – NSW. July 8, 2023. SCMRA and EMRCI, Epping Creative Centre, Dence Park, 26 Stanley Road, Epping. All welcome. Free Entry. Sausage sizzle lunch. 10am–2.30pm. G*etting Started in model Railways* clinic at 11am.
Trevor 0419 492 553 for details or to confirm attendance.

SALE DAYS

CALOUNDRA – QLD. March 18, June 24 & October 7, 2023. Sunshine Coast Model Railway Club Men's Shed in Queensland, Uniting Church Hall, Ulm Street, Caloundra. Steve Blackburne 0409 132 814. bli.bli.boy@gmail.com

Mailbag

One offs feedback

Regarding the February issue's Comment section, where it was asked what models of 'One-Off' prototypes we would like to see produced r-t-r, it would be nice to see all sorts of oddball and one-off models produced – I'm looking forward to SDS's Dynamometer car arriving!

On my workbench at the moment, are HO scale NSW one-of-a-kind vehicles NCX 23148 and L 1107. The NCX steel coil wagon consists of the cradle body from a Rails North NCX and a kit-bashed underframe, while Test Car L 1107 will combine a heavily modified Austrains KKG horse van body and the fishbelly frame from the forementioned Rails North NCX model.

Although I would have been quite happy to obtain these models in r-t-r form if they were available, I wouldn't expect a manufacturer to stick their financial neck out to produce them. Some models are probably better suited to kit makers or kitbashing than r-t-r.

Does the fact that we are discussing production of 'One-Off' types mean we have run out of every day, bread-and-butter prototype rail vehicles to model?

In any case though, a few one-off vehicles I wouldn't mind seeing in either kit or r-t-r form include Blue Circle cement hopper NPDF 3421, aluminium cement hopper ARH 5066 and Aus-Ten Steel coal hopper PCH 5067.

Mark Nethery
Young, NSW

When you attend, tell them you saw it in AMRM!

MURRAY
RAILWAY MODELLERS
ANNUAL
MODEL TRAIN SHOW
layouts, trade stalls, clinics, displays

SAT 20 May 2023
9am - 5pm
SUN 21 May 2023
10am - 4pm

Mirambeena
Community Centre
19 Martha Mews,
Lavington / Albury, NSW

www.murrayrailwaymodellers.com.au
grant.myers56@gmail.com
Grant: 0417 538 700

Thank you all for continuing to provide a high quality publication with articles of interest for modellers of Australian outline.

Responding to the ‘Comment’ section of AMRM Issue 358:

A NSWGR D50/53 with an ‘A’ or ‘B’ tender, as described in the ‘Tenders’ chapter of *‘Standards in Steam: The 50 Class’* by R.G. Preston.

Alternatively, a D55 or a D57 (I believe) would be a popular steam era option.

As a disciple of NSWGR, the following suggestions may be invalid (as I have put in my wish list), but for other modellers:

- Commonwealth Railways (CR) NSU diesel locomotive
- Western Australian Government Railways (WAGR) X Class 2-Do-2 diesel locomotive
- Any SAR Steamers influenced by W.A.Webb!

Thank you for the opportunity to give feedback.

Andrew Cole
Wangaratta Vic

The invitation in your Comment in the February 2023 issue to suggest ‘one-offs’ is very welcome.

For HO scale I would like to put forward the Kitson 0–6–0T goods motors, numbered 97 and 98, which in 1885 took over from horses on the Victor Harbor– Goolwa–Strathalbyn line in South Australia.

That line also saw the three Rowan steam railcars in 1885 and, from 1913 to 1919, the Caldwell Vale railcar with its two petrol engines.

Les Howard
South Australia

As an avid subscriber and self-confessed model railway plonker for over thirty years, I was so pleased to read your Comment on page 5 of the Feb 2023 issue.

A GT46C diesel locomotive would provide a terrific opportunity to bring something different to the r-t-r offering.

Namely V544 in Freight Australia and One Rail but also the Westrail Q Class and FreightLink–Genesse and Wyoming Australia FQ.

Others to consider:

- Pacific National/Freight Australia XR class diesel locomotive,
- Crew Cars (relay vans) across various private and government operators, and iconic freighters. Remember the Tea and Sugar, the Remote Area Fuel Train (RAFT), Cook Fuel Train with six wheel bogie ATGY tank wagons?

There would be plenty more as well, including the absence of Western Australia Government Railways (WAGR) / Westrail in the r-t-r market. Of note only the Standard gauge L Class and WBAX Vans [*Editors note, also produced in HO Scale r-t-r are the WO ore wagons, and WOAX open wagons*] are of any great numbers.

All would generate a different level of interest, I’m sure.

Greg Gilbee
Perth WA

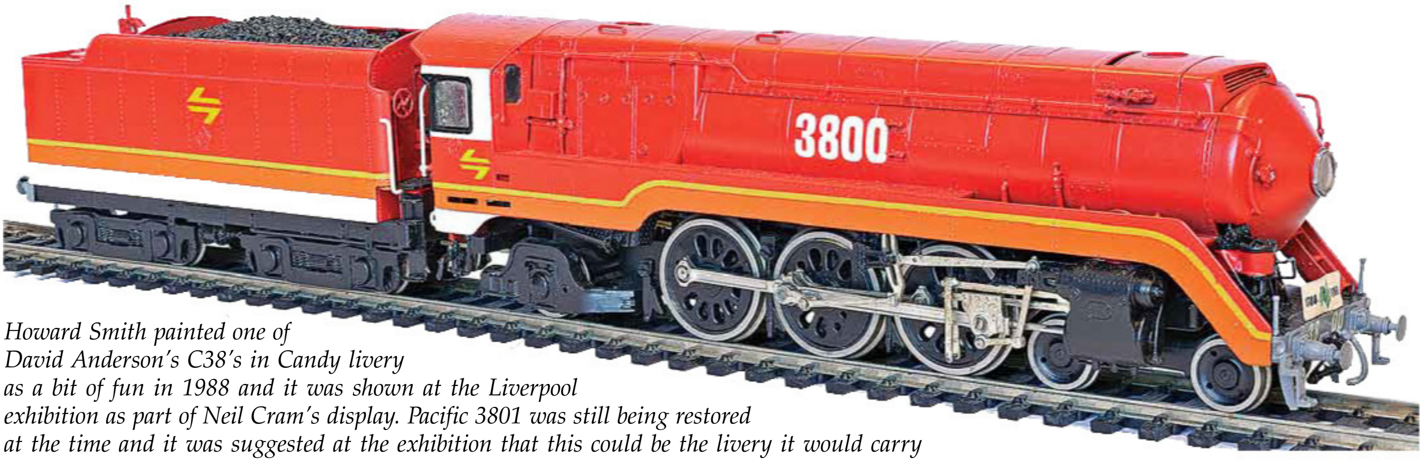
In regards to your February 2023 issue ‘Comment’ I would like to suggest the McKeen Railcar as it would have greater interest having been used in both Victoria and Queensland, thus increasing potential sales.

Malcolm Marks

MAILBAG

Australian MODEL RAILWAY Magazine welcomes letters on any pertinent model railway subject for inclusion in Mailbag. Letters should be sent to Mailbag, SCR Publications, PO Box 345, Matraville 2036, emailed to amrmagzn@tpg.com.au or faxed to (02) 9661 4323. All Mailbag contributions must include the writer’s name, address and phone number to permit verification. Contributions without this information will not be considered for publication.

Editor



Howard Smith painted one of David Anderson’s C38’s in Candy livery as a bit of fun in 1988 and it was shown at the Liverpool exhibition as part of Neil Cram’s display. Pacific 3801 was still being restored at the time and it was suggested at the exhibition that this could be the livery it would carry when it returned to steam. It sure did cause a bit of discussion at the exhibition. Photo Howard Smith

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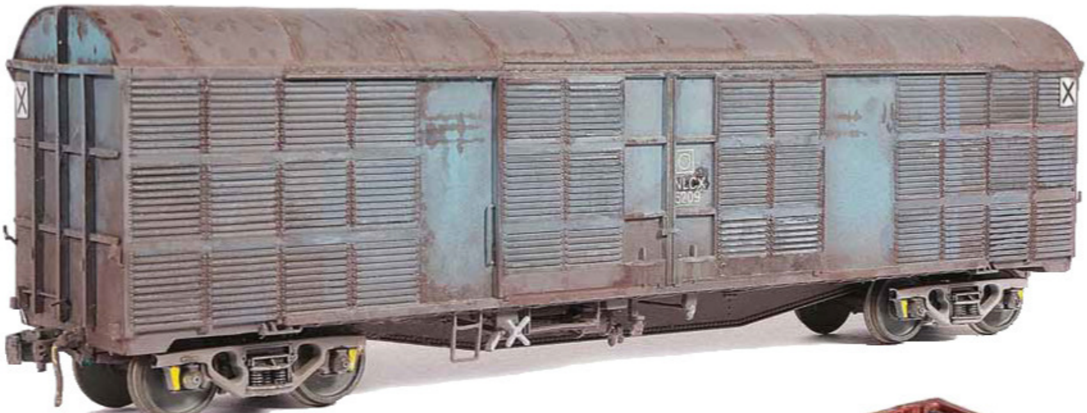
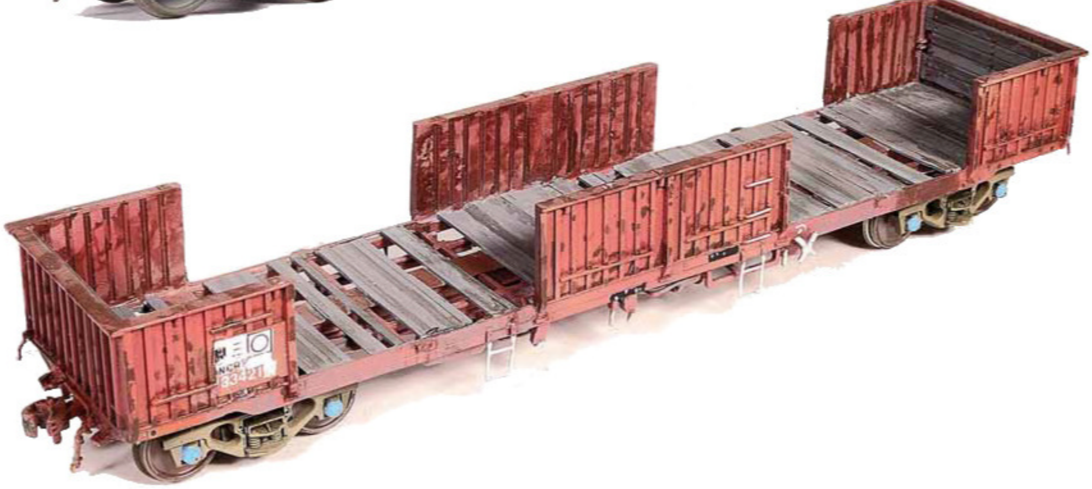
Reader's Gallery

Justin Moy displays his recent techniques for creating unique models from r-t-r rolling stock. Photos by the author.

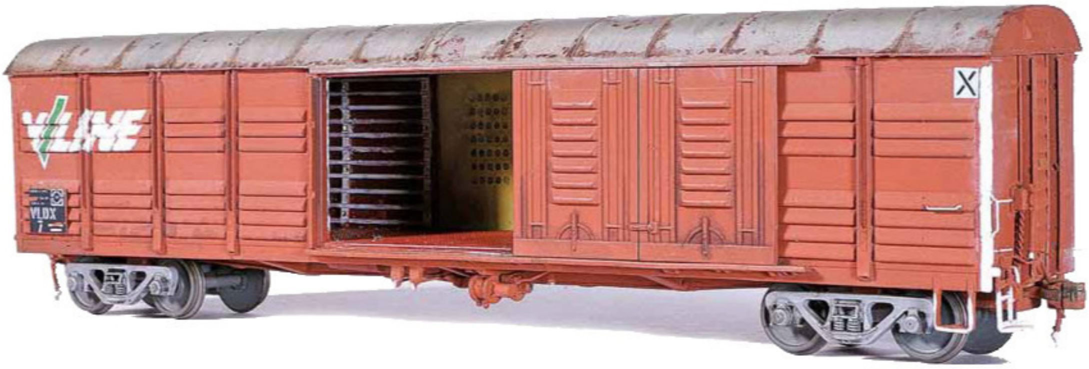
I would like to present some of my kit-bashing work to recent r-t-r models. On these models, all the detail parts were sourced from the donor models as my goal was to keep them at the same level of detail. This allows these kit-bashed models to blend in with my other rolling stock. The weathering and fading follows the same practice used on my locomotive 4470: lighter base colours with added brush work and washes until I matched the prototype photos.



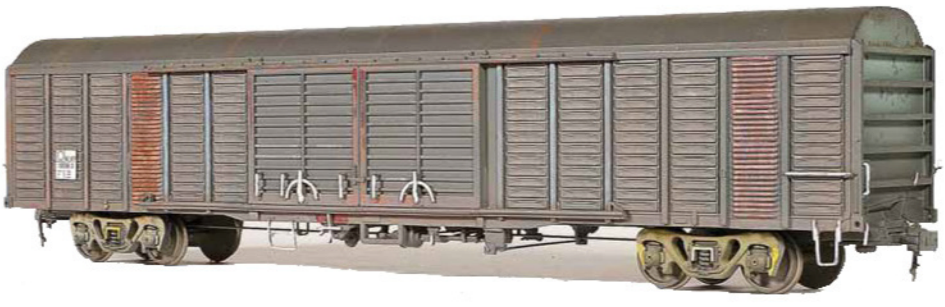
NLCX 5209 is made using a cut down Auscision Models NLJX. It sits on the On Track Models (OTM) LLV underframe and floor. Some styrene was used to add the lifting points and detail around the headstocks. Sometimes it doesn't matter how much research you do. I numbered the NLCX 5209 but, preparing this article, I have just realized that 5209 was placed on a GLV underframe, not LLV. It will be renumbered shortly.



NOBX 33412 is made using an Auscision Models Type Two BDX metal chassis, combined with AR Kits sides and ends. I used these sides and ends so this model would blend in with my fleet of detailed AR Kits Type One models. The use of the Metal chassis allowed for an open chassis to be seen where floor planks are missing. In this case, I used scale 4″ by 2″ styrene individually painted to represent the floor.



VLDX 7 was made by cutting up two On Track Models VLCX version models. Styrene sections were used to create the fish-belly underframe. I was very pleased that I could have the doors open and closed. It blends in well with my fleet of OTM, VLCX and VLEX vans.



This Auscision Models Type Two NLKY Van has had two of its pressed side panels replaced with louvres from an Auscision Models Type One Van. On the prototype this was common practice if the pressed panels were damaged or had come off. Modifications to models like this can go a long way toward making a ready-to run-piece of rolling stock become your own. I also reduced the brake rodding size and added metal steps. I think in the future this would be a nice 3D printing project to avoid cutting up a perfectly good NLKY Model.

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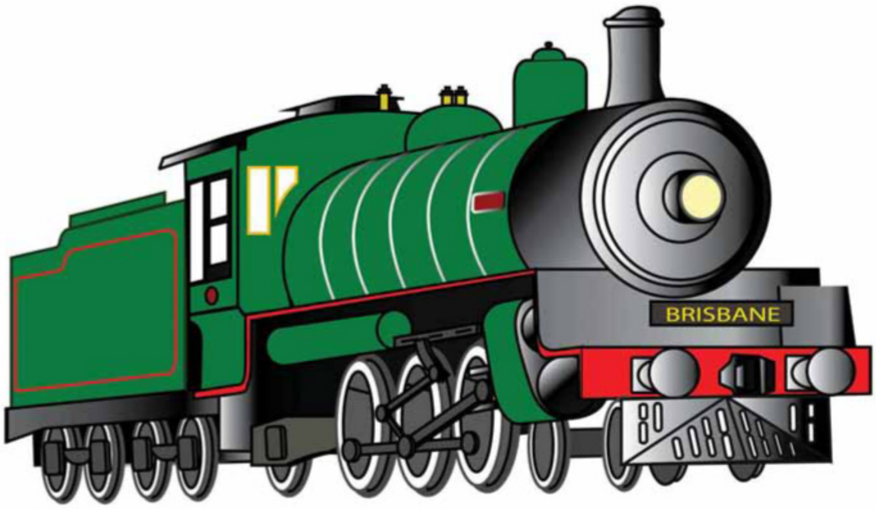

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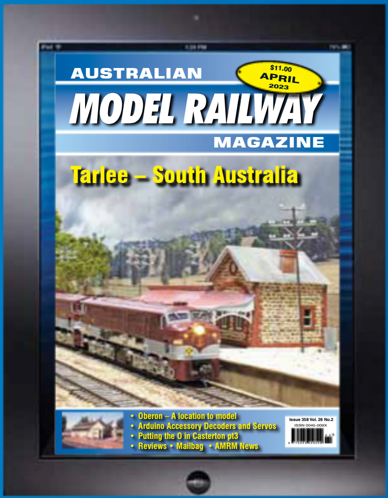
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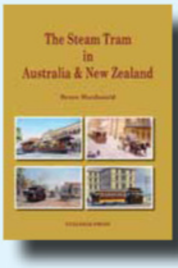

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As the cities in the British Colonies of Australia and New Zealand grew in the 19th century, there was a need for public transportation: people in outlying suburbs needed to get to work more quickly than walking. Horse-drawn omnibuses were introduced by private operators but the need was for something more expansive. Overseas, in Britain and America tramways were quite widespread by the 1860s and it was only a matter of time before this transport mode was extended to the colonies. In Sydney, the first tram, horse drawn, connected Circular Quay on the harbour with the railway station at Redfern in 1861. Although this was dismantled five years later, the die had been cast, tramways being the answer the city fathers were seeking. Although quite a few systems commenced with horse-drawn vehicles, steam-hauled 'motors' as the steam tram locomotives were to be known, became common at the front of a tram. This book is not a history of the various systems in the two countries but a coverage of the various motors that were found in service until the systems were electrified or shut down in favour of buses. Where known, every type of steam motor is shown in photographic or illustrative form, in some cases also showing the modifications applied. Photos have been drawn from many sources and restored trams are shown in colour. Most systems are accompanied by a map.

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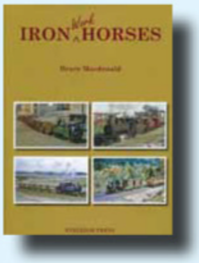

IRON WORK HORSES

This book book covers the industrial steam locomotives that worked in Australia. The chapters cover locomotives manufactured in England and Scotland, Europe, the United States of America and Australia.

The volume contains 176 pages, is hard cover bound with over 450 images and detailed captions for each locomotive type.

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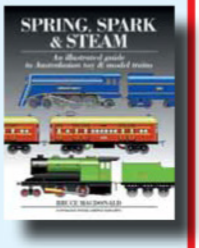
SPRING, SPARK & STEAM



The author takes us on an interesting and informative journey from the beginnings of toy and model trains in Australia and New Zealand, to the days of mass production of what is now known as HO gauge. The book covers the pre and post World War 2 period when experienced model makers were leaving their regular employment to start cottage industries, producing models for a toy-starved public up until the 1960s.

These cottage industries grew to the point where they contributed to the economy of the country, employing considerable numbers of workers in their production, before crumbling under the onslaught of imported toys, changing tastes, and the arrival of TV. As well as the details of fifty-five manufacturers such as Ferris, Maurlyn, Robilt, and Scorpion, the book has over six hundred full-colour photographs of many of the models produced and includes coverage of the retail outlets that were the public face of the industry.

SPRING, SPARK & STEAM has 144 full-colour pages. Page size is 215 x 277mm, with a full-colour hard cover

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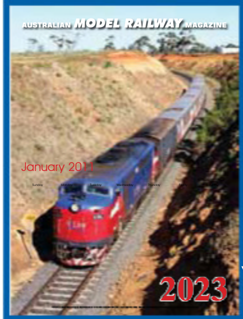

The diesel cover features V/Line A60 on a commuter train to Bacchus Marsh. Other photographs include: John Holland 48s34 and 48s36 on the Tottenham branch; NT67/NSU62 in Darwin Yard with the Larrimah mixed; NSW 42106/42203/4203 at Yass Junction; a cane train north of Mossman; GM23/42217 haul a northbound freight through Kilmore; Australian National DL36 on a coal train at Leigh Creek; 4431/4485/8044 on a freight between Wallerawang and Marrangaroo siding; S303/T357/T333/T378/B74 haul an El Zorro grain train between Ballarat and Warrenheip; Southern Shorthaul Railroad grain train hauled by RL306/4917/B61/C504/BRM001 between Quirindi and Murrurundi; Queensland Railways 1620 with a maintenance train on the Brisbane Valley branch; Hamersley Iron 3010/4035/4055 cross the steel arch bridge spanning Spring Creek, between Paraburdoo and Tom Price; V13 shunting the sidings along the Tamar River at Launceston.

26 Colour Photos

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AUSTRALIAN MODEL RAILWAY MAGAZINE
January 2011
2023

The steam calendar cover features 6018 hauling a coal train from Awaba State Mine to Wangi Wangi Power Station. Other photos include: Victorian J class on a goods near Nhill; NSW 3245 returns to Galong from Boorowa with No.92 mixed; NSW 3135 departing Marayong on the Richmond branch; South Australia 524 at Adelaide station; NSW 3665+3651 haul a goods train near Borenore; Victorian R719 on the turntable at Ararat; NSW 3528+6002 on an express freight near Lisarow; Tasmanian MA4 works a goods from Herrick to Launceston; NSW Beyer-Garratt 6018 climbs McDougall's Hill, north of Singleton with an empty coal train; Queensland BB18¼ 1088 hauls a coal train near Bundamba; 3825 leads No.20 *Southern Highlands Express* from Goulburn to Sydney Terminal; Western Australian W937 hauls No.52A goods.

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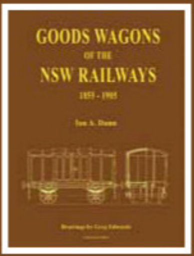

This 368 page volume charts the growth of the NSWGR's wagon fleet over its first half century, from just 52 wagons at its inception to over 11,000 assorted vehicles in 1905.

There is a chapter on each type of wagon or van, photographs of each, generally illustrating a number of variations, all illustrated with 85 superb HO scale drawings by master draughtsman Greg Edwards.

This book supplies most of the answers for those seeking to understand the development of the NSWGR and its goods wagon fleet in the 19th century.

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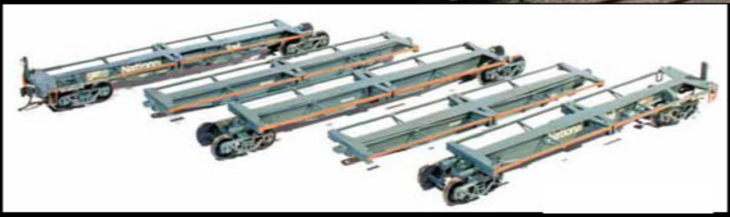

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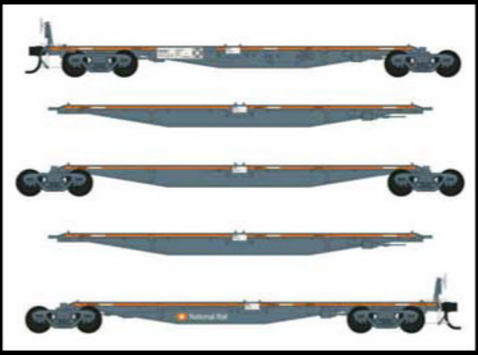

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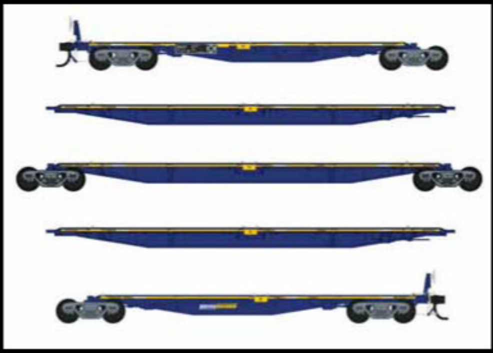

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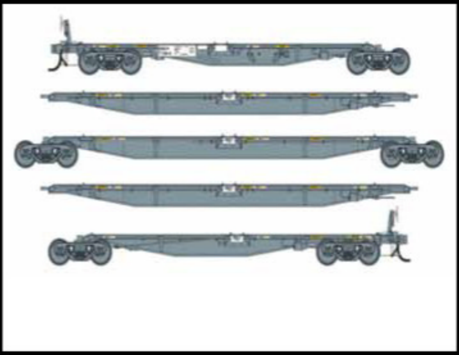

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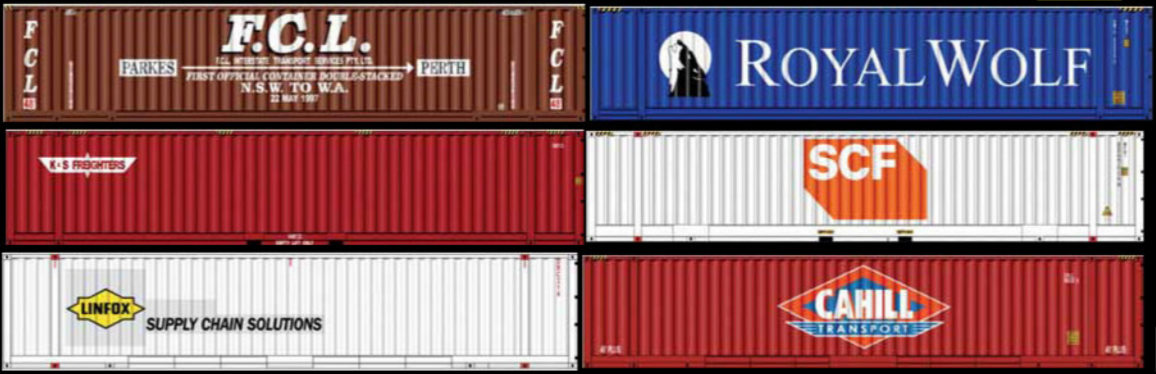
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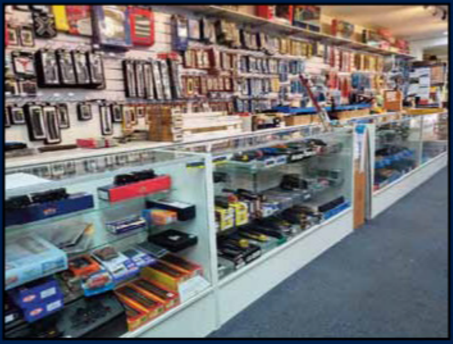

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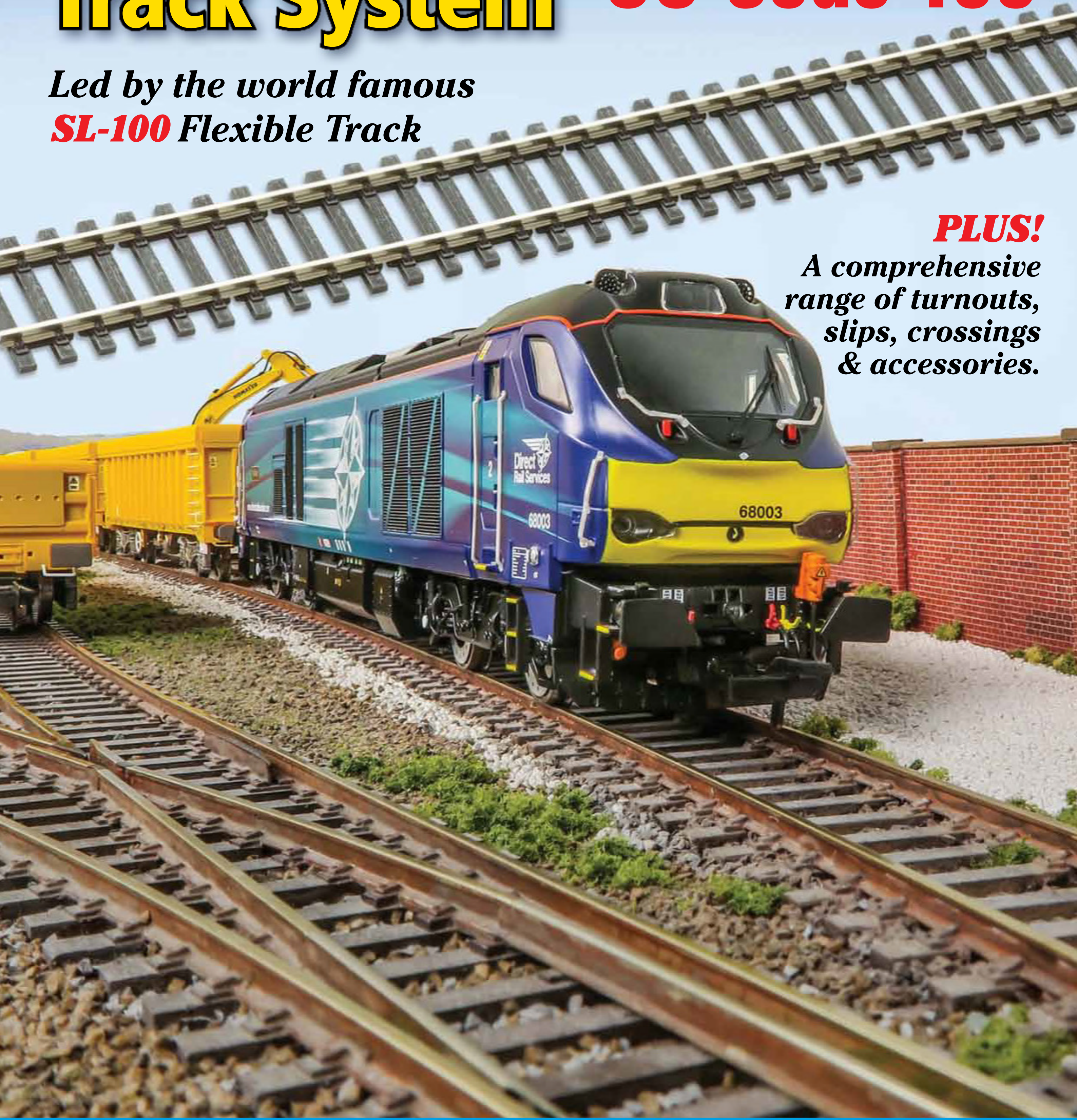

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